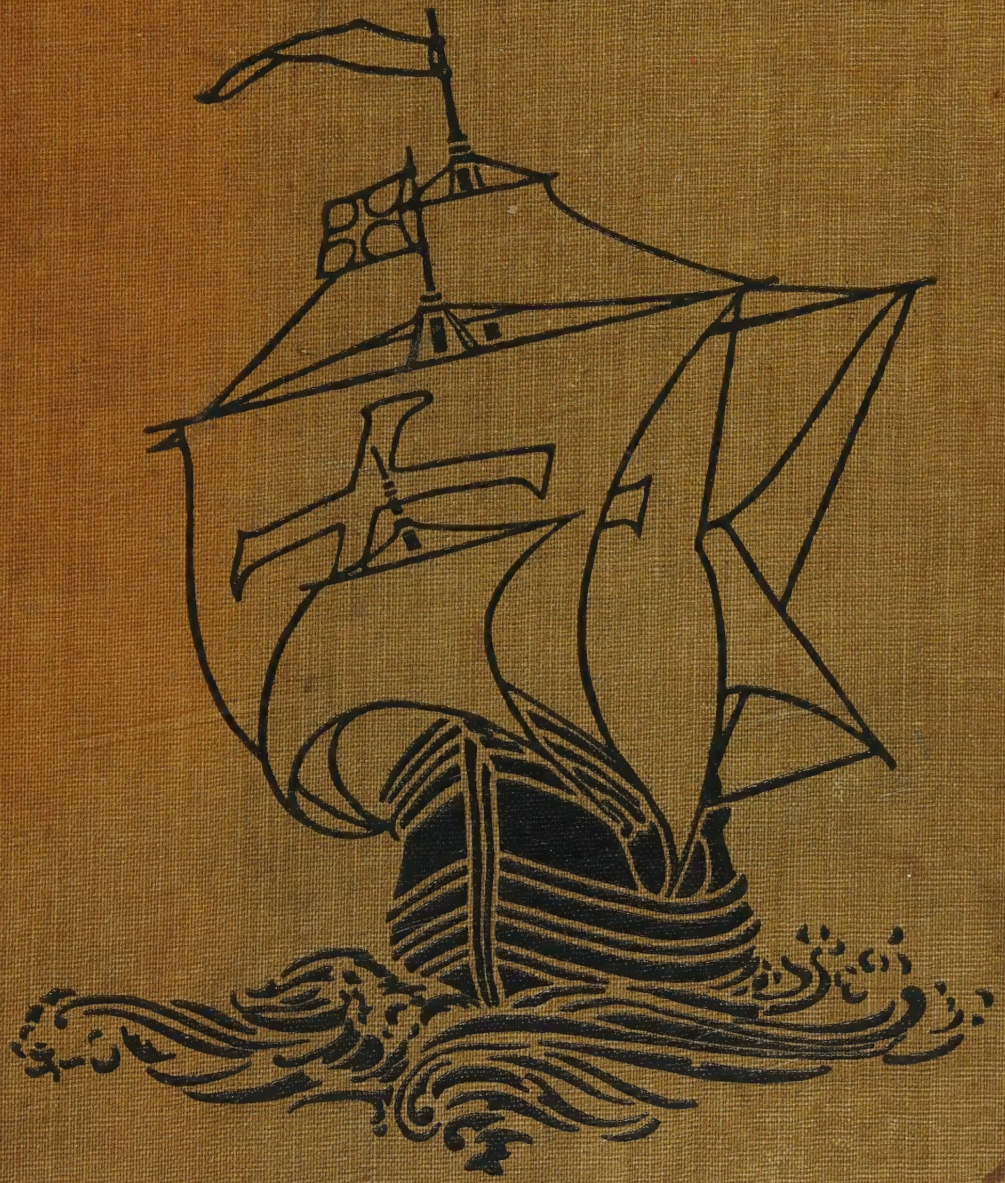
NEW YORK STATE SYLLABUS EDITION

NATURAL INTRODUCTORY GEOGRAPHY

REDWAY AND HINMAN



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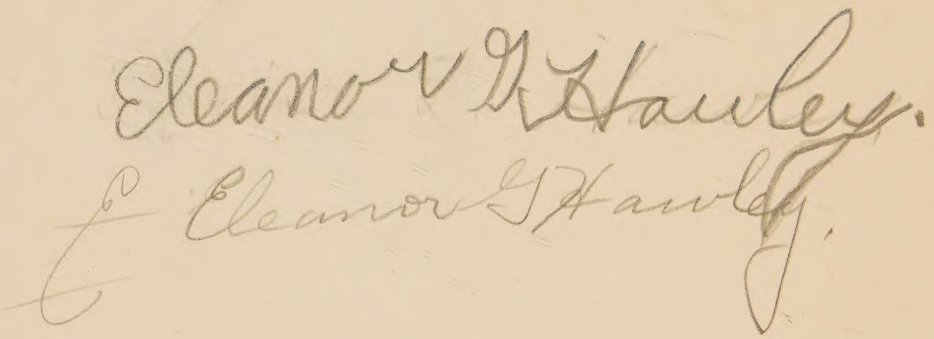
Eleanor G. Hawley.
Eleanor G. Hawley.

THE NATURAL GEOGRAPHIES

NATURAL INTRODUCTORY GEOGRAPHY

BY

JACQUES W. REDWAY

AND

RUSSELL HINMAN

Author of the "Eclectic Physical Geography"

FOR NEW YORK STATE

NEW YORK ·:· CINCINNATI ·:· CHICAGO

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PREFACE

THE Natural Introductory Geography is designed for a first text-book in the subject, and is intended to furnish a course for pupils between nine and eleven years of age.

It recognizes the general fact that geography in the elementary schools should be a practical study of man's physical surroundings *in their relations to him.* Hence the central idea of the treatment is *man* — his history, customs, industries, and commercial relations as modified or controlled by his physical environment.

It recognizes in particular that one of the important aims in the teaching of elementary geography should be to fix indelibly in the brain of each pupil skeleton maps on which he may see with his mind's eye, at any time, the chief physical features, countries, and cities of the world in their proper locations with relation to one another. These are the units of the world's geographical intercourse. A knowledge of their names, locations, and chief characteristics constitutes the proper foundation for the study of geography in more advanced grades; while it fits the large proportion of pupils who leave school at an early age to understand the countless geographical references which they will encounter in daily life.

It points out the great linguistic and racial lines that divide the inhabitants of the earth into separate groups, in each of which there is an essential similarity in manners, customs, and general views of life. The states of our Union are divided into groups upon an industrial basis which is simple, practical, and fundamental.

It develops the subject upon a definite and natural plan, and in accordance with approved pedagogical principles. Each lesson, while complete in itself, paves the way to the following lesson. The pupil is led from that which is perfectly familiar and within easy range of his observation, to form concepts of things that are remote and strange; and not until such concepts have been formed are these things named or defined. Generalizations are demanded only after the materials for their formation have been studied. The pupil's own country is presented early in the treatment, and then all other countries are studied in their relations to it.

It treats the subject simply and sensibly, keeping well within the range of the pupil's comprehension, but never descending to baby talk or other adventitious devices to hold his attention.

It demands work from the pupil, rather than from the teacher, while it stimulates the independent thought and excites the interest of both. At the end of the treatment of each grand division, carefully prepared exercises lead to the correlation and comparison of the parts of the subject already studied, and form a cumulative review and synthesis of the pupil's work. In these cumulative reviews special attention is directed to the location of the particular physical features, countries, and cities which should appear on the skeleton maps that the proper teaching of elementary geography aims to impress on the pupil's mind.

It provides material for concentration, or correlation, of studies. The text is expressed

in accordance with the fundamental laws of English composition, and may be used in language work. The topics at the end of each lesson outline a few paragraphs in which the pupil can reproduce in his own words the main thought of the lesson.

It recognizes the value of map drawing and sand modeling in elementary geography, and introduces them in such manner that they shall be properly used as means to an end, and not as ends in themselves.

The relief maps contain the names of the features represented, and require no "key maps" or other accessories to adapt them for practical use.

The maps of coördinate divisions of the land are drawn on the same scale, so that relative areas are accurately depicted and may be directly compared. Thus, a single scale serves for all the maps of the grand divisions; a single, but larger, scale for corresponding maps of the United States and Europe; and a single, but still larger, scale for the sectional maps of the United States, with the exception of the map of the Northeastern Section, which is drawn on three times the scale of the other sectional maps.

The pictures, most of which have been reproduced from photographs, are of simple subjects within the comprehension of young pupils, and they have been arranged upon the pages in such manner and in such numbers that they serve a really useful purpose in illustrating the text.

The authors take pleasure in acknowledging their indebtedness to Dr. C. T. McFarlane, Principal of the State Normal and Training School at Brockport, New York, for valuable suggestions and assistance in revising the manuscript.

INTRODUCTORY GEOGRAPHY

GEOGRAPHY

To-day you begin to study this text-book of geography. Before this you have probably taken many walks and rides in the region about your home. If you live in the country you have seen, during these walks, hills and valleys, streams and ponds, woods and fields, and you may have visited a near-by village. If you live in a town you have seen the post office, the railroad station, many mills and stores, and quite likely the house where a steam fire engine is kept.

You have seen these places near your home so often that you have learned just where they are, and what they are. Probably you have learned also of what use they are. In learning these things you have been learning geography, for geography teaches about the world in which we live. It teaches what there is in the world, where the different places are, and how or why the various places and things are useful to man.

As you ramble about in the region near home, you can thus learn geography by actually seeing the places and things themselves; but the whole world is so large that few of us can ever visit very much of it. We study some such book as this to learn about the many parts of the world which we have not visited.

The study of geography from a text-book is much easier and more interesting after we have traveled over our own neighborhood and actually seen the places and things which it contains, what they look like, and how they are used.

Geography teaches about the world in which we live; what places and things there are in

it, where they are, and how they are useful to man.

We can study geography by noticing places and things in our walks about home; and this will make it easier to study geography from a text-book about the more distant parts of the world.

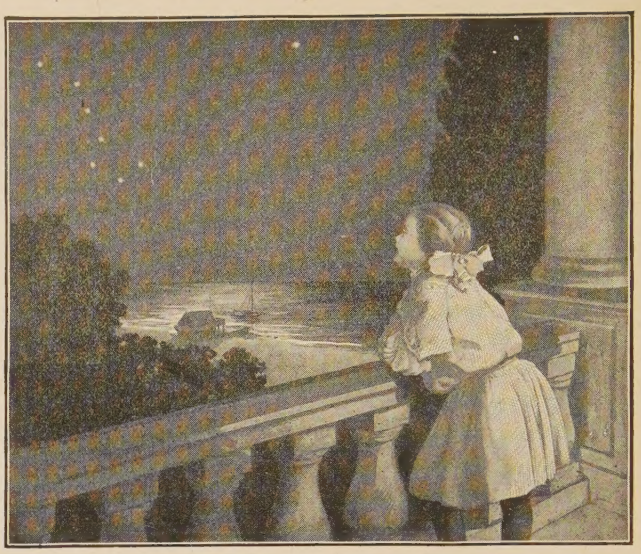
CARDINAL DIRECTIONS

In the study of geography a person often has to describe the direction from one place to another. To make it easier to do this, names have been given to certain directions. The names of the chief, or *cardinal*, directions are *east*, *west*, *north*, and *south*.

You know that the sun seems to rise in nearly the same part of the sky every morning, and that it sets in the opposite part of the sky every evening. *East* is nearly the direction toward sunrise. *West* is nearly the direction toward sunset. If you stand with your arms extended sidewise, your right hand pointing east and your left hand pointing west, the direction straight in front of you is *north* and the direction straight behind you is *south*.

Suppose that you are standing at the dot inside of the ring, and that the arrow marked X points east. In what direction does the arrow Z point? In what direction does the arrow T point? In what direction does the arrow Y point? Which arrow points nearly toward sunrise?

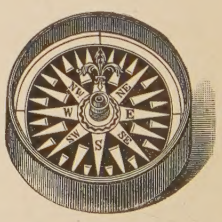
Another easy way to find these directions is to notice your shadow when you are standing upright in the sunshine just at noon. In our part of the world your shadow then points north from your feet. If you face the north, what direction is behind you? what direction to your right? what direction to your left?



THIS GROUP OF STARS IS CALLED "THE DIPPER."

On a clear night you can find these directions by means of the stars. In our part of the world you can see a group of seven stars as in the picture. This group is called "the Dipper." If you follow onward with your eye the line of the front side of the Dipper, you will see another bright star. This is called the North Star. The direction on the ground toward this star is north.

Sailors usually find these directions at sea by means of a wonderful little instrument called the *compass*. This is a box containing a little bar of magnetized steel balanced on a sharp point, on which it can turn freely. No matter which way we may turn the box, this bar, or *needle*, swings back and comes to rest with one end pointing nearly north and the other end pointing nearly south.

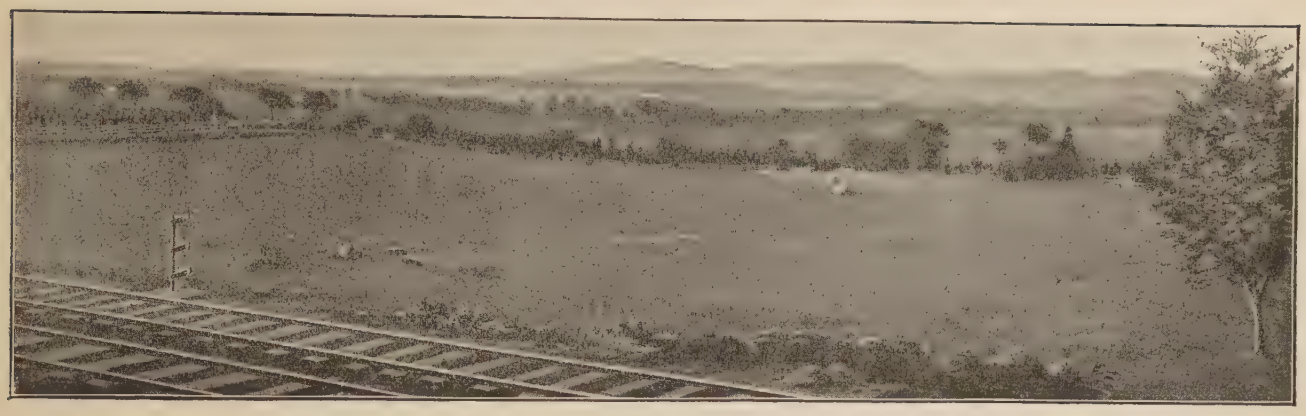


MARINER'S COMPASS.

The names of the cardinal directions are east, west, north, and south.

East is nearly the direction toward sunrise. North is the direction on the ground toward the North Star.

If you stand with your right side toward the east, you will face toward the north, your



We can see a Long Way over the Fields to the Horizon.

left side will be toward the west, and your back toward the south.

THE LAND ENDS TO THE EAST

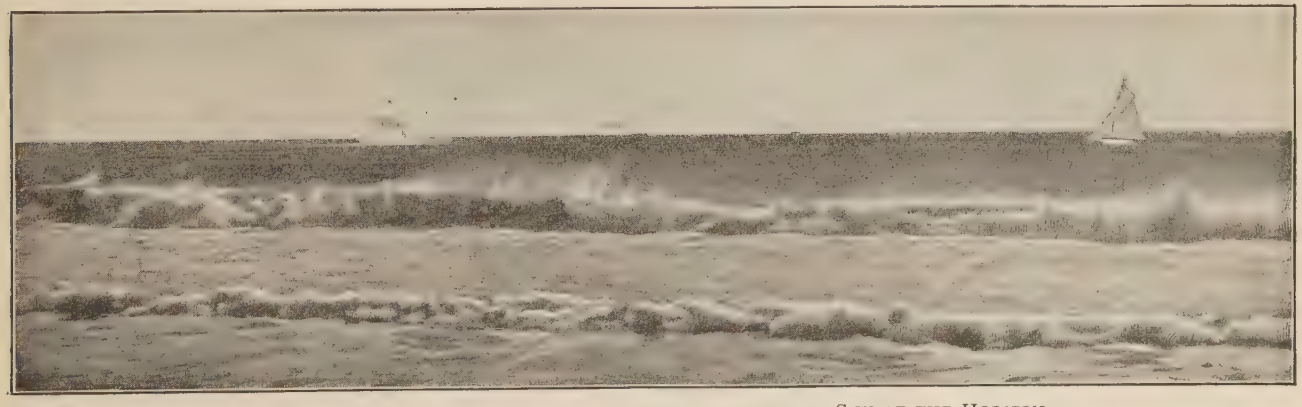
In your walks about home you always find ground to walk on. The ground is sometimes called *land*. If you were to start from your home and travel on and on in any direction, do you think you would ever reach the end of the land? Let us see. In which direction shall we go? Point in the direction of sunrise. Stand up and face the east. We will travel toward the east.

Perhaps we can go part of the way by railroad. We pass through town after town and through the open country, where we can see a long way over the fields to the *horizon*, or the place where the sky seems to meet the land in the distance.

At last we catch glimpses of dark blue water far ahead. It seems to grow broader and wider as we go forward, and finally we reach its edge. It is a vast expanse of water, greater perhaps than any we have ever seen. The edge of the land, or *shore*, stretches off to the right and to the left as far as we can see; while the water extends away to the east until it seems to meet the sky, at the distant horizon.

The surface of the water is usually heaving up and down in waves, which, one after another, move swiftly toward the land, and dash against it with a roar in long lines of snow-white foam.

We have actually reached the end of the land toward the east! The water before us is the *sea* or *ocean*. It is different from most streams and ponds which we have seen, not only because we can not see land on the other



The Water extends away until it seems to meet the Sky at the Horizon.

MOUNTAINS ARE HIGH AND STEEP.

side of it, but also because its water is so salt that it can not be used for drinking.

The land we live on comes to an end somewhere to the east of our home, where it meets the sea or ocean.

The sea is a great body of salt water, so wide that we can not see land on the other side of it.

THE LAND ENDS IN OTHER DIRECTIONS

Let us now travel from home toward the west, to see if the land ends in that direction also. At first we may travel over land that seems smooth and level, but after a while the land before us becomes rough and hilly. The hills are so very high and steep that they are called *mountains*.

By and by we come to a vast sheet of blue water which stretches out in front of us until it seems to meet the sky in the far-distant west. The great waves come rolling in and dash into white foam upon the shore, which stretches out to the right and to the left as far as we can see. If we taste the water we find that it is salt. We have reached the end of the land toward the west! The sea or ocean is again in front of us, but now the sea is west of the land, while before the sea was east of the land.

The land we live on is very wide, from east to west. It takes a railway train nearly five days and nights to cross the land from the ocean on the east to the ocean on the west.

If we journey from home toward the north, the railway soon ends. We then must camp out at night, as we find no towns or farms, and but very few people.

At last, after many weeks of travel, we reach the end of the land, and the salt water of the sea is before us. Here, however, we may find the sea full of floating ice, for in the far north the winters are very long and cold, and the ice and snow are not all melted during the short summer.

We have found that the land ends toward the east, toward the west, and toward the north. Let us see if the land ends also in a southerly direction.

THE NORTHERN SEA IS FULL OF FLOATING ICE.

When we start from home we may travel at first by rail, but after a while we must go on foot or on horseback. Soon we reach a country where there is no winter at all. For weeks we travel through dark, gloomy forests, where the trees and tangled vines are so thick that we can not pass through until we have cut a path. Here we may see troops of long-tailed monkeys playing in the trees, and flocks of beautiful green, red, and yellow parrots flying about.

At length we leave the forests behind and

gradually reach a colder region in the far south, where the winters are long and the summers short, as in the far north. At last we are stopped by a vast expanse of salt water. The sea is again before us! We have reached the end of the land toward the south!

TOPICS FOR ORAL OR WRITTEN WORK

(*Answer in Sentences*)

I. DIRECTIONS. How can you find north? south? east? west?

II. END OF THE LAND. In what directions from your home does the land end? What is the sea? What is the shore?

THE CONTINENT OF AMERICA

If we travel from home in *any* direction, we shall at last come to the sea, for the sea lies on all sides of the land. If we should follow the shore of the sea entirely around the land until we reached our starting place again, we should find that the shape of the land is something like the shaded part of the outline map at the top of this page.

When your photograph is taken, the picture looks like you but is smaller than you are. In the same way this outline map shows the shape of the land, but is much smaller than the land itself. The real land is so very large that it would take several years to walk all around its edge.

On the outline map the land is shaded, but the sea is white, so you can easily tell the one from the other. The directions are marked near the edges of the map. The east, or sunrise, side of the land is toward the east side of the map; the west, or sunset, side of the land is toward the west side of the map; and so on. You see that most of the land is in one great mass, but that along its margin there are several smaller masses of land, each completely surrounded by water. The large mass of land is called a *continent*. It is the continent of America. The smaller masses of land surrounded by water are called *islands*. The continent and islands together are sometimes called simply America.

You will notice that the sea or ocean which surrounds the continent is one continuous body of water; but on different sides of the continent it is called by different names. What is the name of the part of the sea east of America? What is the name of the part west of America? of the part north of America?

Is the continent as wide in the middle as it is farther north or farther south? In the middle it looks like a mere strip or neck of land. At the narrowest part of this neck a man might walk across the continent in a single day from the Atlantic to the Pacific Ocean. A narrow neck of land connecting two larger masses of land is called an *isthmus*, a word which means "neck." Point to the isthmus on the map. What is its name? Point to the part of the continent north of the isthmus; to the part south of the isthmus. Each of these parts is a *grand division* of the continent. One of these is called North America, the other South America. We live in North America.

TOPICS FOR ORAL OR WRITTEN WORK

(*Answer in Sentences*)

I. THE MAP. In what respect is the outline map like the land? Name one way in which it is

different. Which side of the map is supposed to be toward sunrise? toward sunset? toward the north? toward the south?

II. The Continent. Name it. Name its grand divisions. By what oceans is it surrounded? How is it different from an island? What is an isthmus?

ACROSS THE SEA TO THE EAST

What is the name of the continent on which you live? In which of its grand divisions do you live? Which ocean is east of North America?

To-day we will go to the east shore of North America and get on a great steamship in which we will sail out on the Atlantic Ocean.

The Steamship is built of Steel.

The steamship is built of steel, and there is room in it for more than a thousand people. Powerful engines drive it through the water as fast as a freight train moves on the land. We will sail toward the east.

As we move away, the land grows blue and misty in the distance, and finally sinks out of sight behind us. There is now nothing to be seen but the ship, the water all around us, and the sky overhead. We steam along, day and night; the sun seems to rise out of the water in front of us each morning, and to go down into the water behind us every evening.

Even when the weather is bright and pleasant, the waves of the sea are generally

Cabin on an Ocean Steamer.

large enough to make the ship rise and fall and rock from side to side, so that it is hard to keep our balance while walking about the ship. But when the storm winds blow, the waves rise high and toss the great ship about as if it were a cork. We must then stay in the cabin and not go out on deck, for the high waves sometimes dash over the ship, and we might be swept away and drowned.

All this time the engines have been driving our ship eastward. At last, about a week after starting, we can see land far ahead. As we draw nearer to the land, it seems to rise out of the sea, and its shore extends far to the right hand and to the left. Finally our ship stops, and we go ashore. We have crossed the Atlantic Ocean and have reached another continent! This land, which we reach by sailing to the east, is called the Eastern Continent.

TOPICS FOR ORAL OR WRITTEN WORK

(*Tell about Each Topic in Sentences*)

I. The Steamship. Its material. Its size. Its use. Its swiftness.

II. The Journey. Starting place. Direction of journey. Time of journey. Stopping place.

III. Mid-ocean. By what the ship is surrounded. Where the sun seems to rise and to set.

THE EASTERN CONTINENT

How many continents have we now learned about? What ocean is between them? How long does it take to cross from one continent to the other? On which continent do you live? What is the other continent called?

The outline map on this page shows the shape of the Eastern Continent. It also shows the islands near by.

Are most of the islands near this continent directly east of it? Are they directly south? The direction halfway between south and east is called *southeast;* that between south and west is *southwest.* What is the direction between north and west called? What is the direction between north and east? In what direction from the Eastern Continent are most of the islands?

Near the southeast corner of the map you may see a very large island. What is its name? Australia is such a large island that it is generally called a continent. The word *Australia* means "southern country."

Compare the map of America with the map of the Eastern Continent. Which of these continents is the larger? The Eastern Continent is nearly twice as large as the American Continent. Name the three continents in the order of their size.

Name the ocean that is north of the Eastern Continent. Which ocean is east of it? What ocean is south of this continent? Which ocean is west?

In what direction did we cross the Atlantic to reach the Eastern Continent? The dotted line on the map shows where we approached the continent and landed. In what direction is America from the Eastern Continent? America is often called the Western Continent.

Like America, the Eastern Continent is nearly separated into two parts by the ocean. Only a narrow neck of land joins the two parts. What is such a neck of land called? What is the name of the isthmus which joins the two grand divisions of the Eastern Continent?

What is the name of the grand division southwest of the Isthmus of Suez? The other grand division may be called Eurasia; but the western part of it is often spoken of as the grand division of Europe, while the eastern and larger part of it is spoken of as the grand division of Asia. The grand division of Europe is but little larger than the continent of Australia.

TOPICS FOR ORAL OR WRITTEN WORK

(*Answer in Sentences*)

I. CONTINENTS. How many continents have you studied? Name them.

II. GRAND DIVISIONS. Name the grand divisions of the two large continents.

III. OCEANS. What is an ocean? Name the oceans that you have studied.

OUR INTEREST IN THE EASTERN CONTINENT

Although the Eastern Continent is separated from our land by the wide ocean, there are at least two good reasons why we should learn about it.

First, many things in common use come to us from that far-away land. Much of our tea and rice, and nearly all of our pepper and other spices, come from Asia. The linen of which handkerchiefs and tablecloths are made, and much of the woolen and silk of which

THE LANDING OF COLUMBUS IN AMERICA.

our clothes are made, come from Europe. Most of the tin which forms the outside coating of our tinware comes from southeastern Asia, Australia, and the islands between. These and hundreds of other useful things are brought to us across the ocean.

But the Eastern Continent is even more interesting for another reason. It is our old home! Perhaps we ourselves never lived there, but our parents, or our grandparents, or our great-grandparents once lived in Europe; for many years ago all the white people of the world lived in Europe, southwestern Asia, and northern Africa, and most of the white people in the world still live there. So we call the central and northwestern parts of the Eastern Continent the home of the white people, or of the *Caucasian race*. When our ancestors came to America to live they left relatives behind, some of whose great-grandchildren are still living there; so nearly all of us have distant relatives now living in some part of Europe, and this makes Europe particularly interesting to us.

One of the first white men who came to America was Christopher Columbus. He

THE ROUTE OF COLUMBUS.

sailed from the place where we landed on the Eastern Continent, as shown by the dotted line on the map (page 11). From what grand division did he sail? That part of Europe from which he started is called Spain, and is the home of the Spanish people.

From the point where we landed, trace on the map the shore of Europe to the northeast. Close to the shore you will notice two large islands. Part of the larger island is called England, and is the home of the English people.

Probably more white people have come to America from these islands and from Spain than from any other part of Europe.

TOPICS FOR ORAL OR WRITTEN WORK

(*Answer in Sentences*)

I. THE EASTERN CONTINENT. Why is it useful to us? Why is it interesting?

II. WHITE MEN IN AMERICA. Where is the home of the white race? Who was Christopher Columbus? Why are England and Spain especially interesting to Americans?

HOMES OF THE RACES OF MANKIND

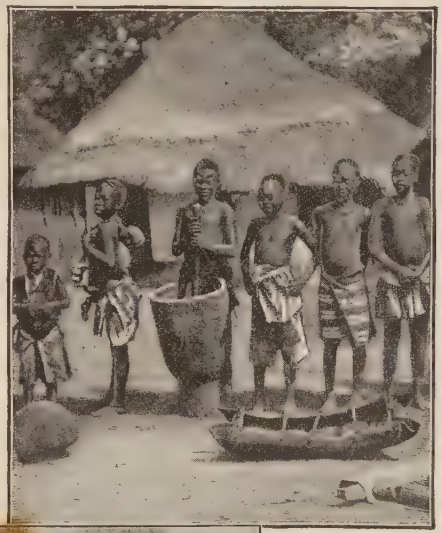
Where is the home of the Caucasian race? Have you ever seen any negroes? Chinamen? Indians?

How does the color of negroes differ from that of white men? How does their hair differ? Negroes usually have broader and flatter noses, and thicker lips, than white men.

Find Africa on the map. In what part of the Eastern Continent is it? The ancestors of every negro in this country came from Africa, for Africa is the home of the *black*, or *Negro*, *race*, and most of the negroes in the world still live in that grand division.

CHINESE.

INDIAN.



NEGROES.

Negroes have lived in this country so long that those we see here speak and dress in much the same way as white people; but the first negroes who were brought to America were poor ignorant savages, and many of the negroes in Africa are still savages. They live in rude and dirty huts made of mud and grass, and wear little clothing.

MALAYS.

There is another kind of people that we sometimes see in this country. They have yellowish skin, and slanting, almond-shaped eyes, and each of them wears his hair in a long braid. They dress in a manner that seems odd to us, wearing loose jackets and queer shoes, and many of those living here are laundrymen. These people are Chinese, and they belong to the *yellow*, or *Mongolian*, *race*.

The home of this race is in eastern and northern Asia. Though there are but few yellow people in our country, very many live in Asia. There are about as many yellow people in the world as there are white people.

The people that live in the extreme southeast of Asia and in the neighboring islands are somewhat different from the yellow race; their eyes do not slant, and their skin is of a brownish color. They are called Malays. The great islands southeast of Asia are the home of the *brown*, or *Malay*, *race*.

When the white men first came to this country, the only people they found here had long, coarse black hair, and reddish-yellow skin. Most of them lived in huts or wigwams made of skins or bark. They wore little clothing, and passed their time in hunting or fighting with bows and arrows. The white men called them Indians.

There are now many more white people than Indians in America; but the Indians used to be the only inhabitants, and all the red men in the world still live here, so America is said to be the home of the *red*, or *Indian*, *race*.

TOPICS FOR ORAL OR WRITTEN WORK

(*Answer in Sentences*)

I. RACES OF MANKIND. Name the five races of men. Where is the home of each race?

II. RACES IN AMERICA. Name and describe the first race that lived here. The second. What other races of men have you seen?

THE PEOPLE DRESS IN STRANGE FASHIONS.

OUR JOURNEY EASTWARD COMPLETED

Look at the map on p. 11. In what direction from home did we travel to reach our landing place in Europe? Let us continue our journey to the east across the Eastern Continent.

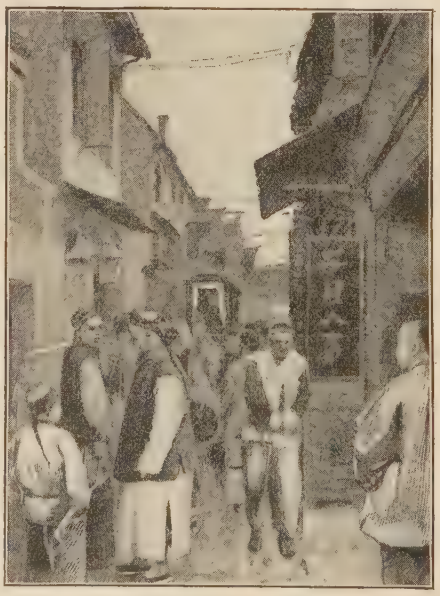
We can go into a steamship again, and sail through the narrow passage south of Spain into the broader body of water which you see on the map between Europe and Africa. Such a narrow passage connecting larger bodies of water is called a *strait* or *channel*.

The broad body of water into which we have sailed is called the Mediterranean Sea. Its name means a sea "in the midst of the land."

How long did it take our steamer to cross the Atlantic? The Mediterranean Sea is about two thirds as long as the Atlantic Ocean is wide. About how long, then, will it take our steamship to reach the Isthmus of Suez? We will leave the ship there.

Near the Isthmus of Suez are many of the places told about in the Bible. At the African end of the isthmus is the "Land of Egypt." Near by in Asia is the place where Joseph was sold by his brethren, and not far away is the place where Jesus lived.

But we must push onward to the east, for it will take us many months to cross Asia to the shore of the Pacific Ocean. We must travel on camels or on horses, and we shall not see many wagons or carts, for there are few good roads. The people dress in strange fashions; they have odd manners, and speak in languages that we do not understand. Much of our way lies over sandy or rocky deserts. Then we climb over mountains so high that their tops are above the clouds.



IN THE NARROW AND CROWDED STREETS.

After a time we descend into lowlands where there are very many people. We pass through many large towns and cities, where most of the houses are only one or two stories high, and where there are few horses, carts, or wagons in the narrow and crowded streets. We can not understand what the people say, but we see that each man wears a braid and has yellow skin and slanting eyes like our laundryman at home. They are Chinese, and this is the home of the yellow race.

At length we reach the end of the land, and the ocean once again extends far out to the eastward before us. What is the name of the ocean east of Asia? (map, p. 11.) Here we find steamships with white men on them, and we sail away from the shore.

We gradually lose sight of the land, and sail on and on, always to the east, with nothing in sight but sky and water. Probably we begin to doubt if there is any land ahead of us, for we keep on sailing more than twice as long as it took to cross the Atlantic.

At last, however, land appears before us, and our voyage is ended; we have crossed the Pacific Ocean and have reached the western shore of another continent.

The shape of the continent is shown on this map. What is its name?

TOPICS FOR ORAL OR WRITTEN WORK

(*Answer in Sentences*)

I. The Journey. From what continent did we start when we crossed the Atlantic Ocean? In what direction did we go? What grand division did we reach? When we continued our journey toward the east, what grand division and what ocean did we cross?

II. Beginning and End of the Journey. From what shore of America did we start? What shore did we reach? Explain how this is possible.

OUR JOURNEY TEACHES THE SHAPE OF THE EARTH

Stick a pin into an orange or ball, as in the picture below. Beginning at the pin, move a pencil point around the orange in the same direction until it reaches the pin again.

The continent of America, on which we live, the Eastern Continent, and the oceans on which we have traveled, are parts of the surface of a great ball, which we call the *earth*. In our long journey eastward, over sea and over land, we traveled around this ball until we came again to the land from which we started.

Pretend that an orange is the round earth, and that the pin in it is the place where you live. Trace several journeys around the orange from the pin, each in a different direction. If you journey far enough, you always reach the pin again. If you should journey on the earth in any direction from your home, and continue without turning to the right or to the left, you would finally reach your home again, because the earth is round like an orange.

The earth seems to us flat instead of round, because it is so large, and we are so close to it, that we can see but a small part of it. From a great height in the sky we might see that the earth is round, and it would look something like one of the pictures on the next page. Each picture shows one half of the earth, while the picture beside it shows the other half.

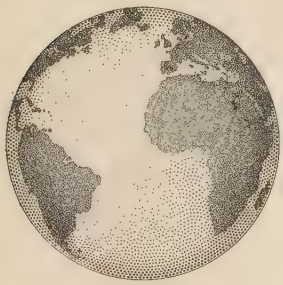
A perfectly round body is called a *sphere*. *Hemisphere* means "half a sphere," and as

the earth is nearly a sphere, a map or picture of half the earth is called a map or picture of a hemisphere.

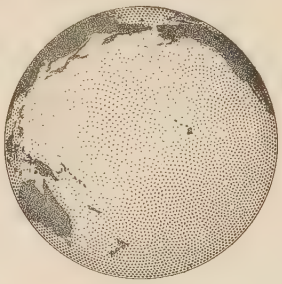
WESTERN HEMISPHERE.

EASTERN HEMISPHERE.

Look at the two pictures above. Notice that the continent of America stretches across one side of the round earth. This half of the earth is called the Western Hemisphere. The Eastern and Australian continents are on the opposite side of the earth. That half of the earth is called the Eastern Hemisphere.



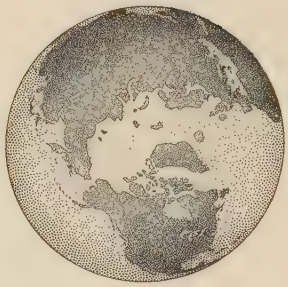
ATLANTIC OCEAN.



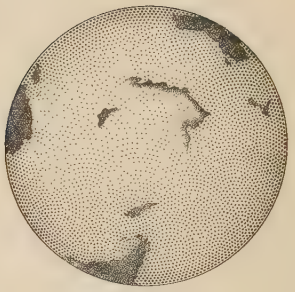
PACIFIC OCEAN.

In these two pictures you see the Atlantic Ocean stretching across one side of the earth, and the Pacific Ocean covering almost all of the opposite side. The Pacific Ocean is much wider than the Atlantic Ocean.

The next two pictures show the Northern Hemisphere from over the most northern point of the earth, and the Southern Hemisphere from over the most southern point. You see that about half of the Northern Hemisphere is land, but that almost all of the Southern Hemisphere is covered with water. Thus about three fourths of the earth's surface is water; only about one fourth is land.



NORTHERN HEMISPHERE.



SOUTHERN HEMISPHERE.

The ocean about the most southern part of the earth is called the Antarctic Ocean.

TOPICS FOR ORAL OR WRITTEN WORK

(*Answer in Sentences*)

I. THE EARTH. What is its shape? How did our journey suggest this? How much of its surface is land, and how much water?

II. THE LAND. Name the continents. In which hemisphere is each?

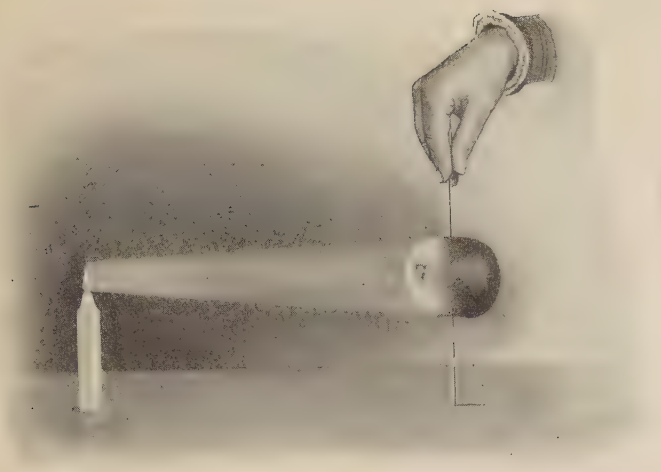
III. THE WATER. Name the five oceans. Tell where each ocean is.

THE TURNING OF THE EARTH

The earth, on which we live, is always turning slowly around toward the east. This motion of the earth makes the sun *appear* to rise in the morning, to move westward across the sky during the day, and to set in the evening. It is really the earth that moves.

The turning of the earth once around in front of the sun makes day and night. We divide this time into twenty-four hours.

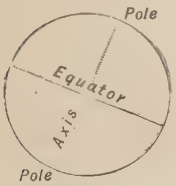
Again pretend that the orange is the round earth. Pin a postage stamp near the middle of one side of it for America, and a larger piece of paper on the other side for Asia. Stick a knitting needle or hat pin through the center of the orange, from the stem, and hold it in front of the candle on the teacher's desk, as in the picture at the top of the next page. We will pretend that the candle is the sun. Now, twirl the pin so as to make the orange *turn slowly*. Notice how America and Asia are brought by this turning, first into the



light, or day, and then into the shadow, or night, and then into the light again.

When it is day in America it is night in Asia. In about twelve hours, however, the earth will turn so far that Asia will be toward the sun, and America away from it. It will then be day in Asia and night in America.

Imagine a line passing through the center of the earth, from one side to the other, around which all parts of the earth move as it turns. We call this imaginary line the earth's *axis*. One end of the axis is at the most northern point of the earth, and is called the *north pole*. The other end of the axis is at the most southern point, and is called the *south pole*.



Imagine a line passing around the earth just halfway between the poles. This line divides the earth into the northern and southern hemispheres, and is called the *equator*. The equator extends exactly east and west.

TOPICS FOR ORAL OR WRITTEN WORK

(*Tell about Each Topic in Sentences*)

I. The Motion of the Earth. The direction in which it turns. The time which it takes to turn once. The divisions we make of that time.

II. The Result. Apparent motion of sun. Day and night.

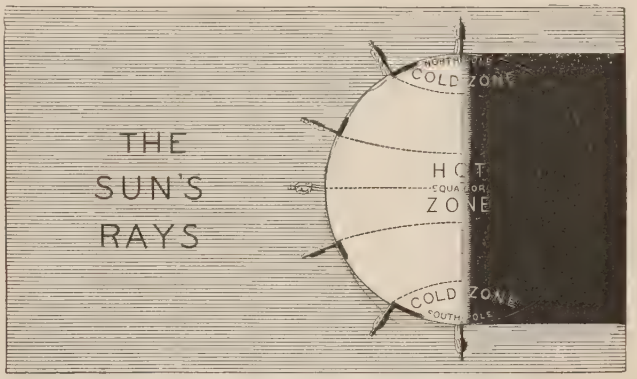
III. Lines and Points. The axis. The north pole. The south pole. The equator.

If desired, Latitude and Longitude may now be studied, from the last lesson in the book.

THE ZONES

Why is it day with us during only part of the time? What, then, do we get from the sun? Is it generally warmer in the daytime or at night? Why? What, then, besides light do we get from the sun?

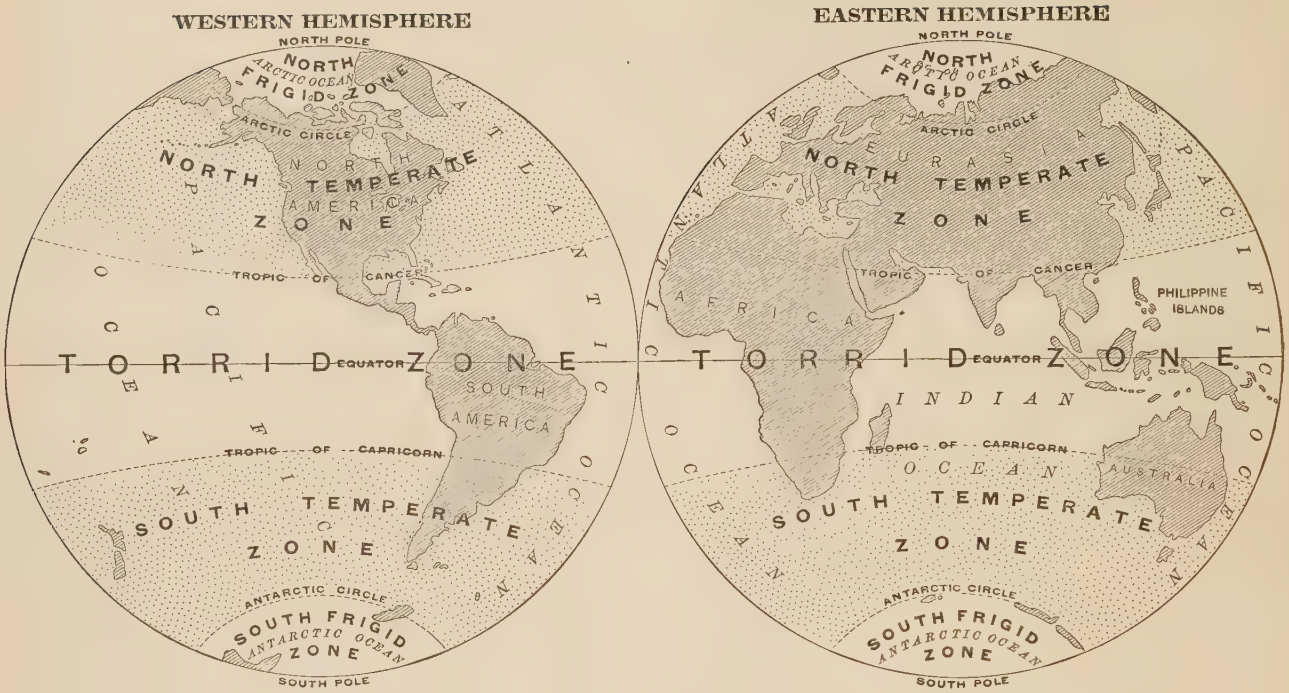
What part of the day is the hottest? Is the sun low or high in the sky during the middle of the day? Does the sun give us more heat when it is nearly overhead, or when it is low in the sky?



The Sun's Rays in the Different Zones.

Look at this picture; to which man does the sun seem to shine from directly overhead? On what part of the earth is that man standing? There is a broad belt, or *zone*, midway between the poles, in some part of which the sun is always directly overhead at noon. In that zone the days and nights are each about twelve hours long; the weather is warm all the year; and where there is enough rain the trees and grass are always green. This belt is called the *hot*, or *torrid*, *zone*.

To which two men in the picture does the sun seem low down in the sky? In the parts of the earth near the poles the sun is never high in the sky, and in winter it may not rise at all for several weeks. In midsummer it does not set, but seems to circle around the sky near the horizon. The winter is so long and cold that only a few kinds of plants live there. Those parts of the earth are called the *cold*, or *frigid*, *zones*. There is a



north frigid zone around the north pole, and a south frigid zone around the south pole.

Between the hot and the cold zones the sun is never quite overhead, and the weather is neither so hot in summer as in the torrid zone, nor so cold in winter as in the frigid zones. There are two of these belts. One is called the *north temperate zone;* the other, the *south temperate zone.*

In which zone is the sun nearly overhead at noon? In which zones do shadows fall toward the north at noon? In which zones do shadows fall toward the south at noon?

In the temperate zones, spring, summer, autumn, and winter follow one after another; but when it is winter in the north temperate zone, it is summer in the south temperate zone. In which season do most of the trees and plants begin to grow and put forth leaves and flowers? In which are they covered with leaves and fruit? When do they shed their leaves? When do they seem dead and bare? We live in the north temperate zone. When the trees near our home are covered with fruit, the trees in the south temperate zone are without leaves and seem dead and bare.

In the Frigid Zone.

In summer the days are longer than the nights in the temperate and frigid zones, but in winter they are shorter. The nearer to the poles we go, the longer we find the the days of summer and the nights of winter; until finally, at the poles themselves, we should find that daylight lasts all summer,

and the darkness of night lasts nearly all winter.

What zone lies around the north pole? around the south pole? Through which zone does the equator pass? Where is the north temperate zone? the south temperate zone? Name the five zones from north to south.

What is the name of the line at the edge of the north frigid zone? of the south frigid zone? at the northern edge of the torrid zone? at the southern edge? Name these lines in order, beginning at the north.

TOPICS FOR ORAL OR WRITTEN WORK

(*Tell about Each Topic in Sentences*)

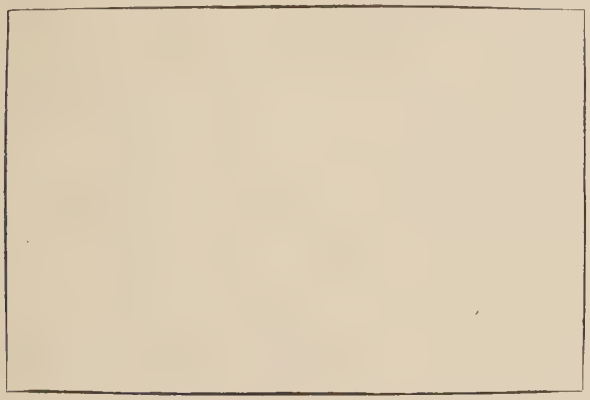
I. ZONES. What a zone is. Where each zone is.

II. LENGTH OF DAY AND NIGHT. In the torrid zone. In the frigid zones. In the temperate zones.

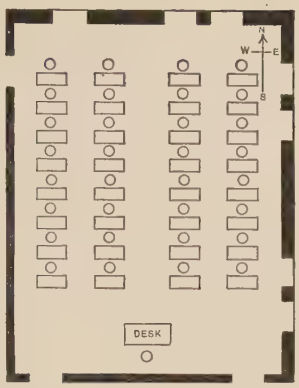
III. HEAT. Where heat comes from. Where the sun is when it gives us the most heat. Why the torrid zone is hot. Why the frigid zone is cold.

THE SCALE OF MAPS

Here is a drawing, or plan, of the floor of a room which is 24 feet long and 16 feet wide.



The right side of the plan represents the east side of the floor. The plan is like the floor in shape, but is much smaller. The floor is 24 feet long; how many inches long is the plan? If 3 inches on the plan represents 24 feet on the floor, 1 inch on the plan represents 8 feet on the floor. The floor is 16 feet wide. Find by measuring if 1 inch in the



PLAN OF A SCHOOLROOM.

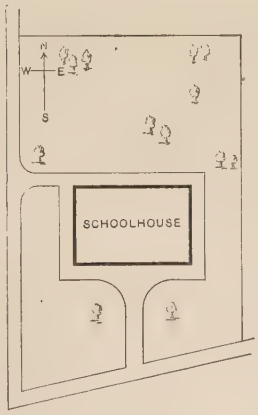
width of the plan stands for 8 feet in the width of the floor. The plan is said to be drawn *on a scale of* 1 *inch to* 8 *feet.*

On the same scale, draw the floor plan of another room which is only half as large as the first; that is, 12 feet one way and 16 feet the other way. If you draw this plan correctly, you will find that it is just half as large as the first. If plans are drawn on the same scale, you can tell by comparing them just how much larger one room is than the other. If you know the scale on which the plan is drawn, you can tell from it the real size of the room.

Which is the east side of your schoolroom? How many feet long is the room? How many feet wide is it? Draw a plan of the schoolroom floor, making the right side of your plan represent the east side of the floor. Your teacher will help you to draw it to a scale. Show upon your plan the places for the doors, windows, desks, and other objects in the room.

How long is the school yard? How wide is it? In what part of it is the schoolhouse? Make a plan, or map, of the yard; show the location of the gate and of the schoolhouse.

In what direction does your schoolhouse



MAP OF A SCHOOL YARD.

MAP OF A TOWN.

front? On what street or road is it? In what direction does the street extend?

On what street is your home? In what direction is it from the schoolhouse? Make a map showing the location of the schoolhouse and of your home.

The pupils may help the teacher to make upon the blackboard a map showing the principal streets and buildings of the town. Each pupil may try to make such a map himself. Write the names of the different places on the map Maps are usually so made that the top of the map represents north, and the right-hand side, east.

NORTH AMERICA. (Same scale as the maps of South America, Eurasia, Africa, and Australia.)

NORTH AMERICA

POSITION AND SHAPE

In what continent do we live? In what grand division?

North America is larger than South America or Europe, but smaller than Africa or Asia.

What circle crosses the northern part of North America? What tropic crosses the southern part? What zones do these lines separate? (map, p. 18.) In what zones is North America? In what hemisphere? (map, p. 18.)

What ocean is north of North America? east? south and west? What land is southeast? What connects it with North America? What land is shown in the northwest corner of the map? What strait separates North America from Asia? What is a strait?

If you should sail west from North America across the Pacific, what continent would you reach? Which side of it? If you should sail east from North America across the Atlantic, what continent would you reach? On which side of it would you land?

Which side of North America is longest? Where is North America widest?

Is the coast line on any side of North America a straight line? Point to one or more places where a part of the ocean extends far into the land. A body of water extending into the land from a larger body of water is called a *gulf*, *bay*, or *sea*.

POLAR BEARS SWIM TO THE ICE.

What large bay is in the northern part of North America? What strait connects it with the Atlantic Ocean? The strait and the bay were named after Captain Henry Hudson, who was one of the first white men to sail into them. While in this bay, his men sailed away with the ship, leaving Hudson and his son in a little boat to die from cold and hunger.

What strait and bay are west of Greenland? *Icebergs*, or great blocks of ice larger than the largest house, can be seen floating in these waters, and also vast fields of ice. Seals, walruses, and other animals that live in cold water often climb upon the floating ice, and great white or polar bears sometimes swim to the ice to catch and eat these animals.

What gulf is in the extreme east of North America? The part of the ocean near the Gulf of St. Lawrence is one of the best places in the world for catching codfish and mackerel.

What large gulf is in the southern part of North America? What sea is north of the Isthmus of Panama? What long, narrow gulf is on the west coast of North America?

What sea is in the northwest, between North America and Asia? Most of the seals whose fur is made into sealskin muffs and jackets are killed in this sea. What strait connects this sea with the Arctic Ocean? What is a gulf, bay, or sea?

Just south of the Gulf of St. Lawrence find a part of the mainland that extends out into the ocean so as to be nearly surrounded by water. A portion of land thus extending from a larger body of land and nearly surrounded by water is called a *peninsula*, a word which means "almost an island." What is the name of this peninsula? The Acadians, about whom Longfellow wrote in the poem "Evangeline," lived in Nova Scotia.

What peninsula is between the Gulf of Mexico and the Atlantic Ocean? What peninsula is between the Gulf of Mexico and the Caribbean Sea? What long, narrow peninsula is in the southwest of North America?

Draw an outline map of North America like the small one here given, but larger and without the islands. Compare it with this one, and find your errors. Practice sketching this map on the blackboard and on paper until you can draw a good outline of North America in two minutes.

ISLANDS

On which side of North America are most of the islands? Name the largest island north of the mainland. What island is east of Greenland? In what zones is Greenland? Most of this island is always deeply buried under snow. The first white men to visit it were sailors from Iceland. They found a small part of it covered with grass; this they called Greenland; then this name was given to the whole island.

What island is east of the broadest part of North America? This island was visited by English sailors a few years after Columbus came to America. Icebergs from Greenland often float as far south as Newfoundland before they melt away.

What islands are east of the Gulf of Mexico? Columbus was the first white man who visited these islands. Until the time of Columbus few people believed the earth to be round, and no one knew of any Western Continent. When people went to Asia from Europe they traveled eastward, as we did in crossing the Eastern Continent. Columbus thought that he could reach Asia quicker by sailing westward around the earth. When he landed on these islands he thought he had reached the Indies in Asia; so he called the people Indians, and afterward the islands were called the West Indies.

What island is near the middle of the west coast of North America? What islands are south of Bering Sea?

TOPICS FOR ORAL OR WRITTEN WORK

I. Location of North America. Hemisphere. Zones. Bordering oceans.

II. Shape. General shape. Compare the three coast lines in length. Describe one coast line: general direction; gulfs, bays, and seas; peninsulas.

III. Size. Comparative. Extent in zones.

MOUNTAINS

The map on p. 20 shows by the smooth and even shading where the surface of the land is smoothest and flattest, and by the broken and irregular shading where the surface is most broken into steep slopes.

In which part of North America does the surface seem most uneven? The whole western part of North America is broken by mountains.

Are the slopes of the hills which you have seen gentle, or steep? Are those hills as high as a church spire? Are they as high as the clouds? Some hills are so high that their tops are often hidden in the clouds. Such hills are called *mountains*. But not all mountains are as high as the clouds: any hill that is quite steep and much higher than the surrounding country is likely to be called a mountain.

HIGH AND STEEP HILLS ARE CALLED MOUNTAINS.

Very many of the mountains in the western part of North America are higher than the clouds.

Some hills stand by themselves and are surrounded by low land, to which they slope down on all sides. More often, however, hills extend in long lines with slopes on but two sides, like the ridge of a roof. Such a line of hills is called a *ridge* or a *range*. A number of ranges near

A LINE OF HILLS IS CALLED A RIDGE OR A RANGE.

one another and extending in about the same direction, form a *chain* of hills or mountains.

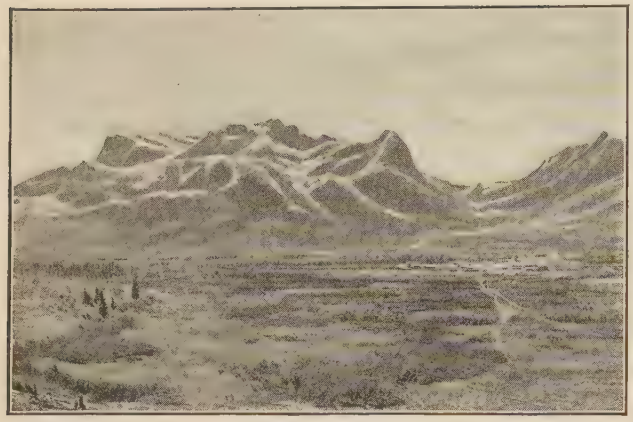
In what direction do most of the ranges in western North America extend? What is the name of the longest mountain chain? The Rocky Mountains extend nearly the whole length of North America. In the north they are always covered with snow, and even near their southern end, in the torrid zone, some of the higher points, or *peaks*, are snow-covered throughout the year; for the higher we go, the colder we find the air to be, so that even in the torrid zone, if the land is high enough, we find ice and snow.

What three long ranges are west of the Rocky Mountains? A broad *highland* extends from these ranges eastward beyond the Rocky Mountains. In it are many short mountain ranges and deep narrow valleys, called *canyons*. This highland, with its many mountain ranges, is much higher than any other part of North America, and is often called the *Rocky Mountain highland*.

Where this highland is widest, it occupies nearly half the width of North America. Where does it cover almost the whole width of the continent?

What other mountains are in North America? Near what ocean are they? Between what two gulfs and in what direction do they extend?

The Appalachian Mountains are much lower than the Rocky Mountains. Their



ROCKY MOUNTAINS.

highest summits are scarcely as high as the flat country at the foot of the Rocky Mountains. They are not high enough to be covered with snow all the year, and few are so high that trees and grass do not grow on their very tops. Thus they look very different from the higher mountains in the west. The Appalachian Mountains usually have smooth, flat tops covered with trees, while the western mountains are covered with trees only part way up their slopes, and have uneven tops of bare rock, with peaks often covered with snow or hidden by the clouds.

TOPICS FOR ORAL OR WRITTEN WORK

I. MOUNTAINS. A mountain. A mountain range. A mountain chain.

II. ROCKY MOUNTAIN HIGHLAND. Its location. Its direction. Its greatest width. Its borders.

III. APPALACHIAN MOUNTAINS. Their location. Compare with Rocky Mountains: in height; in appearance.

APPALACHIAN MOUNTAINS.

PLAINS

In the map on p. 20 what part of North America seems smoothest? Is there a place near your home where the ground, for a great distance in every direction, is smooth and nearly level? Such a place is called a *plain.*

The central part of North America is a vast plain. What mountains border this great central plain on the west? on the east? To what bay and ocean does the plain extend on the north? to what gulf on the south?

When you are walking on a street or road the ground is often so nearly level that you can not tell whether it slopes up or down. If, however, your path is alongside of a stream of water, even though it be flowing in the gutter, you can easily tell which way the ground slopes; since water always flows *down* a slope.

A SMOOTH AND LEVEL REGION IS A PLAIN.

Much of the great central plain of North America is so nearly level that one can not see its slope. On the map (p. 20) the *rivers*, or large streams, are shown by white lines, and they show you which way the plain slopes. You see that several of the rivers flow across the plain to the sea. Notice these rivers. They tell you that the northern part of the plain slopes down to the Arctic Ocean; that the central part slopes down to Hudson Bay and the Gulf of St. Lawrence; and that the southern part slopes down to the Gulf of Mexico.

The part of the plain near the Rocky Mountains is higher than the Appalachian Mountains, and should be called a *plateau*, a name usually given to high plains. The part of the central plain near the Appalachian Mountains, and the part between the Gulf of St. Lawrence and Hudson Bay, are low plateaus. These higher parts slope gradually down to the central part of the plain, which is a broad, flat *lowland*.

PART OF THE ATLANTIC COAST PLAIN.

East of the Appalachians is a narrow plain. What ocean borders it? The shore of an ocean is often called the *coast;* and this narrow plain is called the *Atlantic coast plain*. The low plain near the Gulf of Mexico is sometimes called the *Gulf coast plain*.

Model North America, showing the Rocky Mountain highland, the Appalachians, and the central plain.

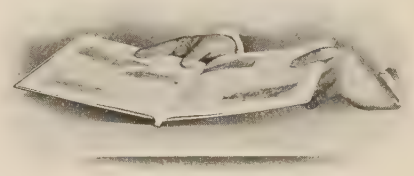
TOPICS FOR ORAL OR WRITTEN WORK

I. PLAINS. A plain. A plateau.
II. GREAT CENTRAL PLAIN. Its location. Its borders. Its slopes. Its plateaus. Its lowlands.
III. ATLANTIC AND GULF COAST PLAINS. Location.

RIVER SYSTEMS AND SPRINGS

In what direction does the southern part of the central plain slope? What river shows this? The Mississippi is the largest river of North America. Several large rivers flow into it and are called its *branches*. Any stream is a branch of the stream into which it flows. Name two branches of the Mississippi flowing from the west. In what direction, then, does the western part of the central plain slope? Name one eastern branch of the Mississippi. In what direction does the eastern part of the central plain slope?

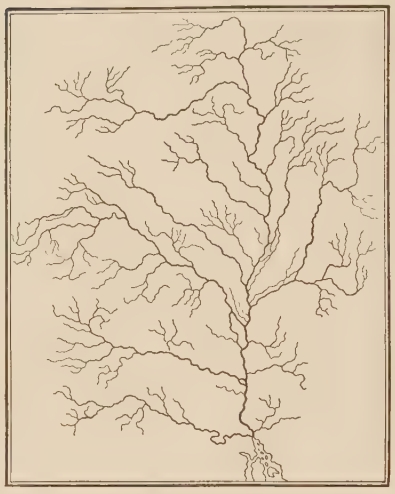
Hold this book open as shown in the picture. When held in this way the book forms a little trough with two side slopes and a bottom slope. This is like the great trough in the land in which the Mississippi flows, except that the land is not so smooth and regular. Such a trough in the land is called a *valley*.



How wide a valley have you seen in your walks? The Mississippi valley is hundreds of miles wide, and its side slopes are very gradual.

Let us travel up the Mississippi to the place where the Ohio joins it. This place is called the *mouth* of the Ohio. The place where any stream flows into another larger body of water is the mouth of the stream. Point (map, p. 20) to the mouth of the Mississippi; of the Arkansas; of the Missouri.

If we travel up the Ohio River from its mouth, we shall pass the mouths of many streams, for the Ohio, like the Mississippi, has many branches, though they are not shown on the map. If we ascend these branches, we shall find that they, too, have smaller branches, and these have still smaller branches, until the streams are mere little brooks. A river, with all its branches, big and little, is called a river *system*.



A River System.

When rain falls, some of the water flows directly into the streams, but much of it sinks into the ground. The ground can hold much water. The water-soaked ground often rests upon a bed of rock or clay, so that the water can not sink further, but trickles down until it reaches the surface and bubbles out as a *spring*, as shown in this picture.

A Section through a Spring.

When you walk in the country, and come to a spring, you will know that the water bubbling out into the little pool fell as rain, perhaps weeks before, and has been creeping along underground ever since. So water may flow from springs throughout dry seasons.

There are many such springs in the central plain, from each of which a little stream flows to join other streams and become part of the great Mississippi system. The place where a stream begins, or rises, is the *source* of the stream. It may be a spring, or a pond, or a marsh, or the melting snow and ice upon some mountain side. Point to the source of the Mississippi; of the Arkansas; of the Missouri.

TOPICS FOR ORAL OR WRITTEN WORK

I. Rivers. Define: river system; valley; spring; source; mouth.

II. Mississippi River System. Principal stream: source; direction. Chief branches. Mouth.

BASINS, FLOOD PLAINS, AND DELTAS

All the land which slopes toward any stream of the Mississippi system is in the Mississippi valley, or *basin*. A stream basin includes all the land drained by the stream and its branches. Point out the basin of the river in the picture below. Draw your pencil around the basin of the Mississippi River (map, p. 20).

Rain water is nearly clear when it falls, but in flowing over the ground it picks up thousands of tiny grains of soil and earth, and carries them along with it to the nearest stream. Hence after a shower the water of

A River Basin.

the stream contains millions of such grains of earth, which make it look muddy.

If the current of the stream is swift, it also picks up and carries away grains of earth and rock from its bed, and thus cuts its bed deeper into the land. Streams are always carrying earth from the highlands, but they carry much more after a shower than at other times.

Put a lump of earth into a tumbler of water, stir the water until it is very muddy, and let it stand awhile. As the water moves more slowly, the fine grains of earth which made it muddy settle to the bottom of the tumbler, until finally it becomes clear again.

So much earth is carried by the many streams of the Mississippi system that in the lower part of the Mississippi River the water is always muddy. The river often rises so high that it overflows its banks, and the muddy water covers the country on either side. This muddy water then ceases to flow so fast, and drops part of its load of earth. The land on both sides of the lower Mississippi is covered many feet deep with soil left in this way by the river. The plain thus built up by the river in time of flood is called its *flood plain*. Nearly all rivers have flood plains formed in the same way. Such plains are generally very fertile.

Strong embankments, or *levees*, are built along the banks of the lower Mississippi to keep the water from overflowing and destroying the towns and farms on its flood plain.

The current of the Mississippi is checked as it flows into the Gulf of Mexico, and much of the earth in its muddy water settles to the bottom. The bottom at this place is thus gradually built up until a fan-shaped tract of low marshy land is formed, through which the river empties by several mouths. This tract of land is called a *delta*. It is constantly being built farther into the gulf. Many other rivers build deltas at their mouths in this way.

A Delta.

Model North America; show the three slopes of the Mississippi basin.

TOPICS FOR ORAL OR WRITTEN WORK

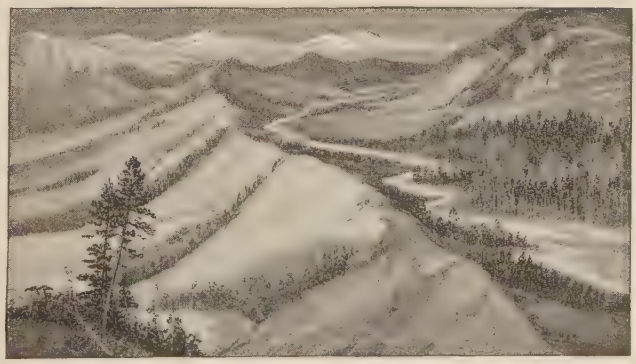
I. Mississippi Basin. Location. Extent. Surface: its two side slopes; its bottom slope.
II. Flood Plain; Delta. Explain each.

DIVIDES AND LAKES

Below is a picture of two stream basins, side by side. Point to the rim between them. It divides the streams of one basin from those of the other, and is therefore called a *divide*. A divide need not be very high, but it must be a little higher than the land on either side of it.

In what direction does the land north of the Mississippi basin slope? (map, p. 20.) Point to the divide between the Mississippi basin and the basins north of it. This divide, which extends across the central plain, is not very high. In some places the ground slopes from it on either side so gradually that it seems to be perfectly level.

North of the Mississippi basin are the basins of several large rivers.



The Rim between Two Basins is called a Divide.

What river flows down the east slope of the Rocky Mountains toward Hudson Bay? There is a great rocky dam across the lower part of its valley. When a river meets such an obstruction, it spreads out and must fill the hollow before it can flow over the dam and continue its course. Thus a pool of still water, or *lake*, is formed above the dam. How big a lake have you seen? The lake in the Saskatchewan basin is so big that at the widest part you can not see across from one shore to the other. What is its name?

What river flows into Lake Winnipeg? A river which flows into a lake is called an *inlet*. What river flows out of Lake Winnipeg? The river flowing out of a lake is called its *outlet*. A lake may have many inlets; but a lake seldom has more than one outlet.

THE POOL OF STILL WATER IS A LAKE.

What river flows down the east slope of the Rocky Mountains into the great central plain and then turns northward and flows to the Arctic Ocean? What three lakes are in the Mackenzie basin? There are thousands of lakes in this part of the central plain, but only the largest are shown on the map. Point to the divide between the Saskatchewan and Mackenzie basins.

What three great river basins have you found in North America which extend as far west as the Rocky Mountain highland? What other river basin slopes from this highland, to the Gulf of Mexico? Which is the only great basin in the central plain that does not extend so far west as the Rocky Mountain highland? Draw a line around the St. Lawrence basin. What lakes are included in it? These are called the Great Lakes because of their size. One of them is the largest fresh-water lake in the world.

Toward what oceans do the great basins that we have studied slope? Toward what ocean and from what mountains do the other great basins of North America slope? So the Rocky Mountain highland divides North America into two great slopes, a slope toward the Pacific on one side, and a slope toward the Arctic and Atlantic on the other side. This great divide between the eastern and western slopes of North America is called the *continental divide*. For much of its length it lies along the top of the Rocky Mountains.

What is the most northern river of the Pacific slope? Into what sea does it flow? What river flows directly into the Pacific? Into what gulf does the Colorado flow?

Sketch North America, and show the principal rivers.

TOPICS FOR ORAL OR WRITTEN WORK

I. DIVIDES. Definition. Continental divide: position; slopes into which it divides North America.
II. SLOPES. Rivers in the slope to the Gulf of Mexico. Rivers and lakes in the Atlantic slope. In the Arctic slope. Rivers in the Pacific slope.

PEOPLE AND SUBDIVISIONS

The map on the next page shows, by means of the little dots, the parts of North America in which most of the people live. In the parts where the dots are closest together the number of people is greatest, but in the places where there are few or no dots very few people live.

It will be seen that most of the people of North America live in two great groups. One of these groups is in the eastern part of America, south of the Great Lakes. The

other group is in the southern part west of the Gulf of Mexico. Hardly any one lives in the cold northern part of America, and few people live on the Rocky Mountain highland, except in the south.

Because Englishmen discovered Newfoundland and the lands near it, the English people claimed nearly the whole of North America, and England owns the northern part to this day. This part is called the Dominion of Canada. Find it on this map.

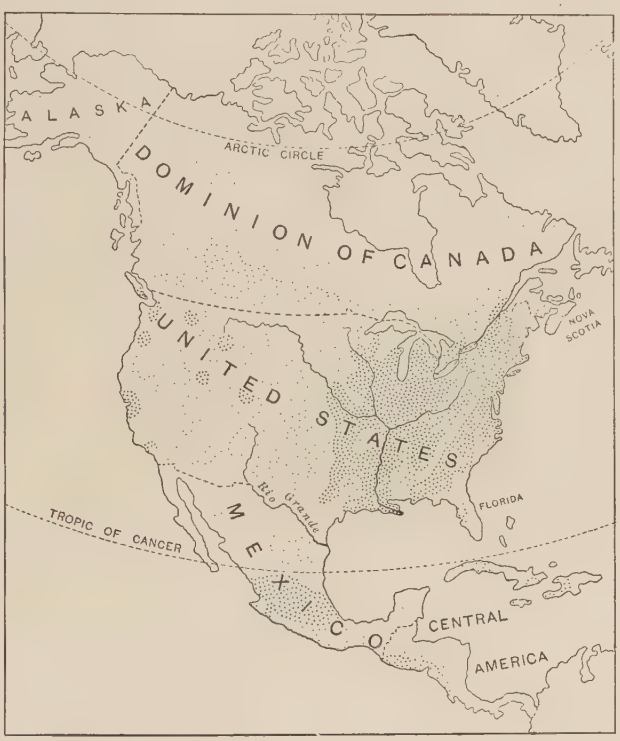
The English once owned the eastern part of North America, south of Canada, and many people came from England to live there. But later these settlers rose against the king of England, and took the country south of Canada for their own. They named this country the United States. Since then other regions have been added to it, so that it now extends across North America from the Atlantic to the Pacific Ocean, and is one of the greatest and richest countries in the world. It is the country in which we live. Find it on this map. Find Alaska on this map. It belongs to the United States.

As Canada belongs to England, and as most of the white people who first settled in the United States came from England, the English language is spoken by most of the people in these countries.

The part of North America west of the Gulf of Mexico and the Caribbean Sea was settled by white men who followed Columbus to America from Spain. Most of the people living there still speak the Spanish language, and might not understand us if we talked to them in English. For a long time the king of Spain owned these countries and made laws for them, but at last his soldiers were driven away by the descendants of the Spanish settlers, who now own the countries and make laws for themselves.

The country west of the Gulf of Mexico is called Mexico; the narrow strip of land between Mexico and South America is called Central America.

Find Mexico on this map. Find Central America. What language is spoken in these countries? What language is spoken by most of the other people in North America? What, then, is one important difference between the two great groups of people in North America? The Rio Grande may be said to separate the English-speaking from the Spanish-speaking people of North America.



PEOPLE ARE MOST NUMEROUS WHERE THE DOTS ARE THICKEST.

Sketch a map of North America; show where most of the people live, and mark the boundary line between the English-speaking and the Spanish-speaking peoples.

TOPICS FOR ORAL OR WRITTEN WORK

I. PEOPLE OF NORTH AMERICA. In what parts most of the people live. How they are divided according to their language.

II. ENGLISH NORTH AMERICA. Countries. To whom each belongs.

III. SPANISH NORTH AMERICA. Countries.

THE UNITED STATES

THE UNITED STATES. (Same scale as the relief map of Europe.)

POSITION AND COAST LINE

What ocean is east of the United States? west? What gulf is south? What country is north of the United States? south? Trace the boundary lines on the map. What tropic is a little south of the United States? In what zone is the United States?

The United States stretches across the central part of North America from the Atlantic to the Pacific Ocean — a distance of nearly three thousand miles. Its width from north to south is about half as much as its length from east to west. A railroad journey across the country from north to south takes about three days and nights; one from east to west, about five days and nights.

Our country lies in the warmer part of the north temperate zone. It is neither too cold for the growth of food plants, as much of Canada is, nor too hot for people to work comfortably, as are most of the countries lying in the torrid zone to the south of us. Our country is so large that there are many ways by which people can easily earn a living here. For these reasons it is not surprising that more people live in the United States than in all the rest of North America and South America together.

Do you find more bays on the Pacific or on the Atlantic coast of the United States? Bays are likely to contain natural *harbors*, or places where ships can find shelter from the wind and waves. Cities, called *ports*, are often built at good harbors, since ships can be safely loaded and unloaded there. Name four bays

A Lighthouse.

on the eastern coast; two on the southern coast; one on the western coast. There are great ports at good harbors on all of these bays.

At many places on the coast there are points of land extending into the water. These points are called *capes* or *headlands*. Lighthouses are often built on capes to guide and warn sailors at night. What cape is near Massachusetts Bay? Find Cape May; Cape Hatteras. Name two capes in Florida; two on the Pacific coast of the United States.

Colorado Canyon.

Make a sketch map of North America (see p. 22) and show on it the Tropic of Cancer and the Arctic Circle, and the United States.

TOPICS FOR ORAL OR WRITTEN WORK

I. Location of the United States. In North America. In the zones.
II. Coast Lines. Number. Bays on each.
III. Advantages. For plants. For people.

RELIEF AND DRAINAGE

Is the eastern or the western half of the United States the more mountainous? (map, p. 30.) What two ranges are near the west coast? What mountain chain is near the eastern coast? What long, high chain is west of the center? What plain is east of the Appalachian Mountains? What river drains most of the central plain? Name two western branches of the Mississippi; one eastern branch. What five large lakes are wholly or partly in the northern part of the United States? What river forms the outlet of these Great Lakes? What river drains the southeastern part of the Rocky Mountain highland? the southwestern part? Into what does each flow? What river drains the northwestern part? What large branch has the Columbia?

The *Rocky Mountain highland* covers most of the western half of the United States, and is about a mile high. The highland is bordered on the west by the high ranges of the Sierra Nevada and the Cascade Mountains. The long Rocky Mountain chain crosses the highland near its center, and west of this are many short ranges. Many of these mountains have peaks nearly three miles high.

The Colorado River and the Snake River flow through the plateaus west of the Rocky Mountains. They are fed by melting snow on the mountains, and are cutting their channels deeper and deeper. As there is little rain in the Rocky Mountain highland region, but little earth is washed into these rivers from the sides of their valleys. So these valleys have become very deep and narrow canyons, through which the rivers rush along with very swift currents.

The dry highland region between the Colorado and Snake rivers is called the Great Basin, because its few streams do not reach the ocean. Some of the streams flow into lakes which have no outlet, but many of them sink into the sand. Lakes having no outlet generally contain salt water. The largest lake in the Great Basin has no outlet. What is its name?

East of the Rocky Mountains the highland is so flat and smooth that it is called the Great Plains, although it is really a high plateau. This region is too dry for trees to thrive, but most of it is covered with coarse bunch grass.

The Rocky Mountain highland is famous for its mines of gold, silver, copper, and lead, and its pasturage for sheep and cattle.

The Appalachian highland is much lower than the Rocky Mountain highland. It consists of several parallel ridges and a low plateau west of them. The general height of the Appalachian Mountains is less than half a mile, and the loftiest peaks are but little over a mile high.

These mountains are covered with forests, and contain vast stores of coal.

The Central Plain. Between the Appalachian Mountains and the Rocky Mountains the surface slopes gently downward to the lowland plain that forms the central part of the United States. It has a smooth surface, a fertile soil, and plenty of rainfall, and it is the greatest farming region in the world. There are some forests in the southern part of this lowland plain, and near the Great Lakes in the north, but the central and western parts of the lowland are grassy *prairies*, with hardly any trees.

The Mississippi River flows through the central plain, and receives its great branches from both sides. Some of these rivers are deep enough for steamboats to ascend them from the Gulf of Mexico nearly to the foot of the mountains. Name two southern branches of the Ohio. Name three rivers besides the Mississippi that flow into the Gulf of Mexico.

The slopes of the central plain are generally very gentle: parts of the divide between the Mississippi valley and the Great Lakes are flat and swampy regions. No large rivers flow to the Great Lakes, but the lakes are very large, and on them many steamers are used.

What river west of the Great Lakes flows north? The water of the Red River of the North finds its way, through Lake Winnipeg, into the Hudson Bay.

The *Atlantic coast plain* lies east of the Appalachian Mountains. In the north this plain is rather hilly, with swift streams and a rocky coast. In the south it is wide and flat, with a sandy coast; it is a farming region.

The *Gulf coast plain* joins the central plain and the southern part of the Atlantic plain, and is much like them.

Trace the divide between the rivers of the Mississippi basin and those flowing across the

Hudson River Gorge.

N. Y

Atlantic plain. You see that in the south the Atlantic rivers rise on the east side of the mountains. In the north, however, many of them rise west of the mountains and flow across the ranges in narrow gorges, or *water gaps*.

The rivers which flow into Chesapeake Bay, Delaware Bay, and New York Bay have cut deep water gaps through the mountains. These gaps are used for roads, railroads, and canals leading from the Atlantic plain to the central lowland. What river flows into New York Bay? The valley and water gap of the Hudson River form part of the lowest and most nearly level route across the Appalachian Mountains.

Sketch North America, mark off the United States, and show by lines the Sierra Nevada, Cascade, Rocky, and Appalachian chains. Show also the Mississippi, St. Lawrence, Colorado, and Columbia rivers, and their chief branches.

TOPICS FOR ORAL OR WRITTEN WORK

I. Western Highland. Extent. Height. Rivers. Great Basin.
II. Central Plain. Extent. Slopes. Rivers.
III. Appalachian Mountains. Extent. Height. Northern rivers. Southern rivers. Water gaps.
IV. Atlantic and Gulf Coast Plains. In the north. In the south.

Winter in the North.

Winter in the South.

The picture above is a scene in the northern part of our country in December. What is on the ground? The summer foliage is gone and the trees are covered with snow. The song birds have flown away to a warmer region.

The next picture shows a winter scene in the southern part of our land. The palmetto trees and other plants are in full leaf. Hidden among the leaves are many of the birds which flew away from the north on the approach of winter. The children in the southern part of our country know but little about sledding or snowballing, for in that warm land the little snow that falls melts quickly.

Oranges, cotton, sugar cane, and rice are among the plants that thrive only where the weather is warm, and these plants can be grown in the southern part of the United States. The cooler climate of the central and northern part of our country is just suited, however, for such valuable food plants as corn, wheat, potatoes, and apples.

HEAT

The northern part of the United States lies about midway between the equator and the north pole. The summers are warm, but the winters in that part of the country are generally very cold. The southern part extends nearly to the torrid zone, and the weather there is nearly always warm and mild.

TOPICS FOR ORAL OR WRITTEN WORK

I. Changes of Temperature. In the north. In the south.

II. Plants. Some kinds that thrive in the north. In the south.

RAINFALL

How do we keep the grass on the lawn fresh and green during the dry summer months? How are the fields and forests watered? It is only where enough rain falls to make plants grow, or where they can be watered in some other way, that farming can be carried on.

Where does the rain come from? Can you guess how the water gets into the clouds? Why are clothes, after being washed, hung in the air? Where does their moisture go? It passes away in particles so tiny that they can not be seen as they mingle with the air. Water in this form is called *vapor*. Vapor is passing into the air nearly all the time from every damp object, and from the surface of every pond and stream, but most of all from the vast surface of the sea. Although sea water is salt and bitter, the vapor that rises from it is fresh and pure, its salt being left in the sea. When vapor mingles with the air, it is carried about by the winds, and thus much vapor from the sea is brought over the land. The air always contains some vapor, generally a great deal.

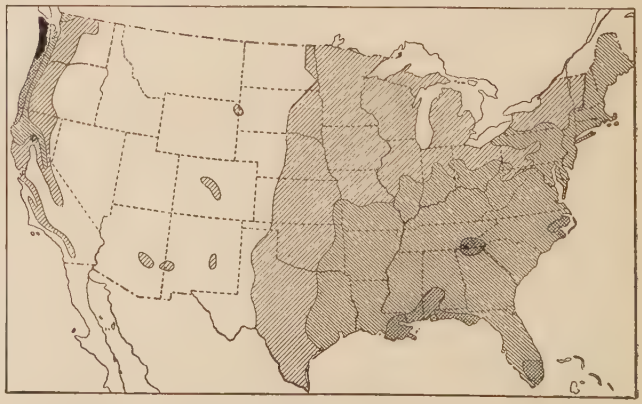
Vapor can not be seen, but it is easily changed back again into drops of water big enough to be seen. In a warm room fill a tumbler with ice water, and notice the drops of water that gather on the outside of the glass. The water could not come through the glass from the inside of the tumbler. Where, then, could it have come from? Cold air can not contain so much vapor as warm air, so when the warm air of the room was chilled against the cold glass, some of its vapor was changed into the little drops of water on the outside of the tumbler.

The air above the sea is loaded with much vapor. When it blows as wind to a colder region, it is chilled and part of its vapor is changed into countless tiny water drops or ice crystals. These float in the air and form *clouds*, or unite to make larger drops or flakes, which fall to the ground as *rain* or *snow*. Thus the rain comes from the clouds, the clouds come from the vapor in the chilled air, and the vapor in the air comes mostly from the sea.

The shaded part of the chart below shows where enough rain falls in our country to make farming most successful.

Most of the winds of the United States come from the west and south. They reach the western coast loaded with vapor from the Pacific Ocean. They are chilled in crossing the lofty mountains near the coast, and most of their moisture falls as rain or snow on the western slopes of the mountains.

After losing their moisture these winds sweep over the western plateaus as dry winds. Parts of that region are so dry that few trees and food plants thrive there. Those parts



Shading indicates Plenty of Rain for Farming.

THE CAPITOL AT WASHINGTON.

are called *arid* regions. Regions so dry that very few or no plants can grow in them are called *deserts*.

The eastern half of the United States is watered chiefly by southerly winds which bring moisture from the Gulf of Mexico.

In what two regions of our country does much rain fall? In what region does but little rain fall? What regions are best for farming? Why?

TOPICS FOR ORAL OR WRITTEN WORK

I. A DROP OF WATER. Its home. How it got into the air. Where it traveled. How it became visible. In what form it fell to the earth. How it traveled back to the sea.

II. RAINFALL AND ITS EFFECTS. On the eastern lowland. On the western highland. On the Pacific coast.

HISTORY AND GOVERNMENT

What peninsula is in Canada just northeast of the United States? (map, p. 29.) What peninsula is in the southeastern part of the United States? What plain extends between these two peninsulas?

There were thirteen English *colonies*, or groups of settlements, lying along the Atlantic coast between Nova Scotia and Florida, when the early settlers in this country rose against the king of England (p. 29).

Then followed the Revolutionary War, in which the colonists united under the command of General Washington, drove the king's soldiers away, and forced the king to permit the colonists to govern themselves.

Each colony chose its own officers and made its own laws. A body of people that makes its own laws and governs itself may be called a *state;* so each colony now called itself a state.

As the colonists by uniting had been strong enough to drive away the king's soldiers, it was decided that the states should unite to form a strong nation, which was called the *United States*.

The lawmakers of this nation are chosen by the people of the various states. A government like that of the United States, in which the people choose their own officers, is called a *republic*.

Although most of the colonists lived east of the Appalachian Mountains, the land given up to the United States by the king reached as far west as the Mississippi River.

The western land was inhabited by Indians. It was not divided among the colonies, but

was held by the United States as *public land.* As the number of people in the east grew larger, some of them crossed the mountains and settled on the public land. When enough people settled in any part of this public land, that part was separated from the rest and admitted into the Union as a new state. This plan was followed not only with the public land east of the Mississippi River, but also with the wide region between the Mississippi and the Pacific Ocean which the United States afterward obtained in various ways.

As the public land has been gradually settled, state after state has been formed from it and admitted into the Union, until now, instead of thirteen, the United States contains forty-eight states. Besides the states there are two *territories* which have been annexed to the country, but not yet admitted as states. The United States also has possessions in the West Indies and in the Pacific Ocean.

The people of each state choose men who meet in the *capital* city of the state to make laws concerning state matters. The chief officer of a state is called the *governor.* He lives at the capital, and it is his duty to see that the laws are carried out.

The states, however, are joined in the great nation of the United States. Each state chooses men who go to Washington, the capital of the nation, to help make laws on matters of interest to all the states. The chief officer of the nation is chosen every four years, and he is called the *President.* He lives in the White House at Washington.

TOPICS FOR ORAL OR WRITTEN WORK

I. GROWTH. Number of original states. Location. Present extent of the United States. Present number of states.

II. GOVERNMENT. Definition of a state. The United States: its formation; its government.

Map Exercise. — For each day's lesson learn the name and location of each state in *one* of the columns under the map.

1st Lesson.	*2d Lesson.*	*3d Lesson*
Maine	New York	O-hi'o
New Hamp'shire	New Jer'sey	In-di-an'a
Ver-mont'	Penn-syl-va'ni-a	Il-li-nois'
Mas-sa-chu'setts	Del'a-ware	Ken-tuck'y
Rhode Is'land	Ma'ry-land	Mich'i-gan
Con-nect'i-cut	Vir-gin'i-a	Wis-con'sin
	West Vir-gin'i-a	

4th Lesson.

Min-ne-so'ta
North Da-ko'ta
South Da-ko'ta
Ne-bras'ka
I'o-wa
Mis-sou'ri
Kan'sas

5th Lesson.

North Car-o-li'na
South Car-o-li'na
Geor'gi-a
Flor'i-da
Al-a-ba'ma
Mis-sis-sip'pi
Ten-nes-see'

6th Lesson.

Ar'kan-sas
Lou-i-si-a'na
Tex'as
Ok-la-ho'ma
New Mex'i-co
Ar-i-zo'na

7th Lesson.

Col-o-ra'do
Wy-o'ming
Mon-ta'na
I'da-ho
U'tah
Ne-va'da

8th Lesson.

Cal-i-for'ni-a
Or'e-gon
Wash'ing-ton

9th & 10th Lessons.

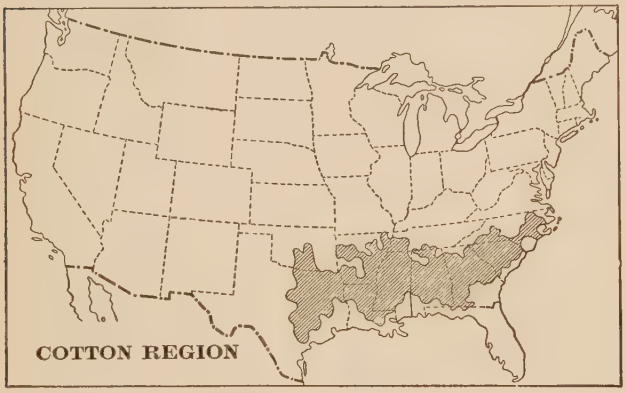
Review these lessons until you can name and locate upon the chart on p. 39 every state, when the colored map is covered up.

FARMING, LUMBERING, AND HERDING

Nearly all the men in our country are engaged in some business, or *industry*, by which they earn a living for themselves and their families. Farming, lumbering, herding, mining, manufacturing, and commerce are the chief industries.

Farming, or agriculture, is the most important of all industries. Most food plants are grown on farms, and so is cotton, from which more cloth is made than from any other substance.

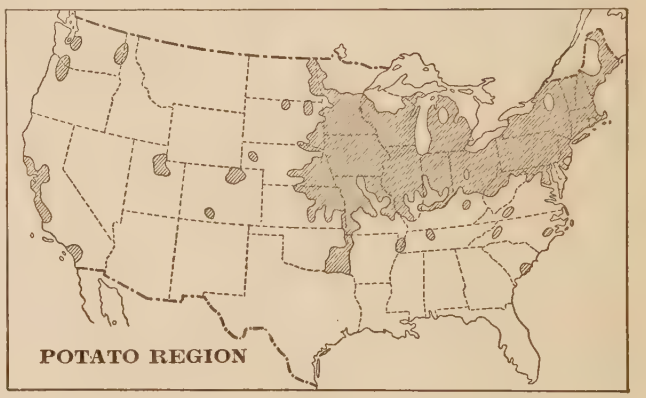
We have learned (p. 34) that the eastern half of our country is moist enough for farming, and we have also learned that the southern part is warm enough for cotton to grow.



This map shows the cotton-growing region of the United States. Make a list of the eleven states in this region. Corn and other food plants are grown, but cotton is the most important crop of this southern section. More cotton is produced here than in all the rest of the world.

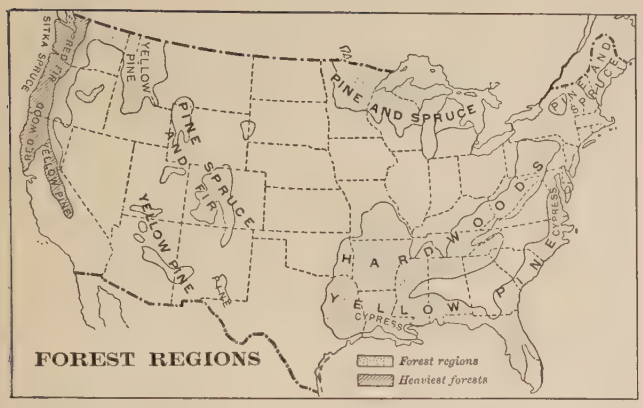
Of all farm plants which the people of this country use for food, wheat, of which flour is made, is the most important. Great quantities of potatoes and other vegetables are also eaten. Much corn, oats, and hay are grown on the farms, but they are fed chiefly to animals — hogs, horses, and cattle. All of these food plants grow best in a cooler climate than that needed for cotton.

These two maps show that most of our wheat and potatoes are grown in the northern or



cooler half of the moist eastern region. In this same northern section also most of the corn, oats, and hay are grown, and most of the hogs and cattle are raised. The northern section is thus the great food-growing region of the United States; it is one of the greatest food-growing regions in the world. Wheat, fruit, vegetables, and other farm plants are grown also in the moist region near the Pacific coast.

Lumbering.— In the lumbering industry the trees are cut down in the forests, trimmed of their branches, and cut into logs of proper length. Then the logs are often hauled by oxen or horses to the nearest stream and floated down to the sawmills. In some places railways are built into the forests to carry the logs to the sawmills; in other places the logs are pulled to the sawmills by cables.



This map of the forest regions shows that there are forests in both the food-growing section and the cotton-growing section. These forests are chiefly near the Great Lakes, on the Appalachian Mountains, and in the southern parts of the central and Atlantic plains. They are all great lumbering regions.

The heaviest forests in the country, however, are in the moist region of the Pacific coast, west of the Sierra Nevada and Cascade Mountains.

Most of the Rocky Mountain highland is too dry for trees to grow; but the mountain ranges and high plateaus receive more rain and snow than the rest of the highland, and in such places open forests are found.

Herding. — Although too dry for forests, much of the western highland receives enough rain for coarse grasses to grow. These grasses form excellent pasturage, and throughout this whole plateau section — both on the Great Plains and on the plateaus west of the Rocky Mountains — the herding of sheep and cattle is a leading industry.

HERD OF CATTLE.

The sheep are raised chiefly for their thick wool, which is clipped from the animals each year. The wool is sent to the East, where it is spun into yarn and woven into woolen cloth or into carpets. The clipping does not hurt the sheep at all, and their wool soon grows long again, just as your hair grows again after it is trimmed by the barber.

The cattle are raised for their flesh. When they reach the proper age, the animals themselves are driven into cattle cars and shipped east to the corn region, where they are fattened and then killed and converted into beef.

TOPICS FOR ORAL OR WRITTEN WORK

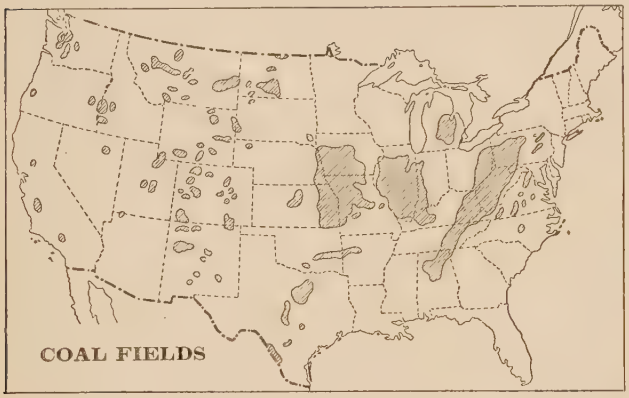
I. SECTIONS. Great food-growing section. Two other farming sections. Herding section.
II. PRODUCTS OF EACH SECTION.

IN A COAL MINE.

MINING

Coal is the most valuable product of our mines. It is used for heating houses and for cooking, and also in the furnaces of steam engines and in making iron and steel. It is a mineral which is dug out of deep, dark mines far below the surface of the ground.

Coal is composed of parts of plants which ages ago grew on the surface of low swampy ground. As these plants died and fell, they gradually covered the ground with thick layers of vegetable matter. After a while these layers were covered with water, which washed mud and sand over them until they were deeply buried. In time the buried vegetable layers were pressed into coal, and the mud and sand over them were pressed into rock.



On this map find the three largest coal fields in the United States. Most of the coal mines are in these three fields and in the small fields east of them.

Metals. — Mention six articles made of iron or steel. Telephone and electric car wires are usually of copper. Iron and copper are the most useful of metals. They are obtained from rocks called *ores*.

More iron ore and copper ore are mined in the United States than in any other country, and also great quantities of gold and silver are mined. The rock containing these metals is often obtained, like coal, from deep mines. In some places, however, iron ore is found quite near the surface of the ground.

Gold is so valuable that, in regions of gold-bearing rocks, it often pays to dig up and wash the sands and gravels of streams in order to obtain the fine grains of gold which have been washed out of the rocks. This is called *placer* mining.

Iron ore is mined in many parts of the country, but most of it comes from near Lake Superior. Much iron ore is mined also near the southern end of the large eastern coal field.

Much copper ore is mined near Lake Superior, but most of the copper and the gold and silver come from the western highland, or plateau section, where these metals are mined in every state.

Petroleum. — What is burned in lamps to give light? Kerosene is made from rock oil, or petroleum, which is obtained from deep pipe wells. Great quantities of petroleum are obtained in many parts of the United States, especially in California, Oklahoma, Illinois,

Derricks and Tank at Oil Wells in California.

West Virginia, Ohio, Pennsylvania, Louisiana, and Texas. Point out these states on the map.

At first the petroleum may spurt out of a new well with great force, but after a few days or weeks it must be pumped out, and finally the well "goes dry." Then another well is sunk. From the wells the petroleum is pumped through pipe lines, often many miles long, or sent in tank cars on railways, to the refineries. Here it is made into kerosene, vaseline, gasoline, and other things.

TOPICS FOR ORAL OR WRITTEN WORK

I. Mines. Kinds. Location of each. Products.
II. Oil Wells. Location. Product.

MANUFACTURING AND COMMERCE

The products from farms, pastures, forests, and mines are called *raw* products. Usually they must be changed in some way, or *manufactured*, to fit them for use. *Commerce* is the buying, selling, and transporting of the raw or manufactured products. The raw products are usually sent to cities and towns to be sold and manufactured, and the manufactured products are then sold and sent all over the world from the towns. Hence, large and prosperous cities and towns are located at places that can be easily and cheaply reached; otherwise, they would not have become large and prosperous.

Coast cities, therefore, are generally located at good harbors, often near the mouths of rivers having low valleys extending inland. Inland cities are generally located on rivers or at places where several railroads or common roads meet or cross one another. Manufacturing cities are likely to be located at waterfalls, where the water power may be used in turning machinery, or at some place where coal for making steam may be obtained cheaply.

Since manufacturing and commerce are carried on chiefly in cities and towns, these industries are more active in regions where there are many large cities and towns, than in regions where the towns are few and small.

On this map the dots represent the more important cities and towns of the United States. In what part of the country are the towns closest together? The northeastern part of the United States is one of the great manufacturing and commercial regions of the world.

In the part of this region east of the Appalachian Mountains more people are engaged in manufacturing and commerce than in any other industries. West of the Appalachian Mountains, in the great farming regions, many of the farm products are manufactured. At points convenient to the forests, are sawmills and furniture factories. At other points convenient to both the coal mines and the ore mines, iron and steel are made and shaped into rails, engines, machinery, and other forms.

Most of the towns in the United States are connected by railroads which aid in collecting the raw products and distributing the manufactured articles. Over these railroads many of our products are sent to the great coast cities, or seaports, where they are loaded on ships and sent as *exports* to foreign countries. The products of other countries which are brought into our country are called *imports*.

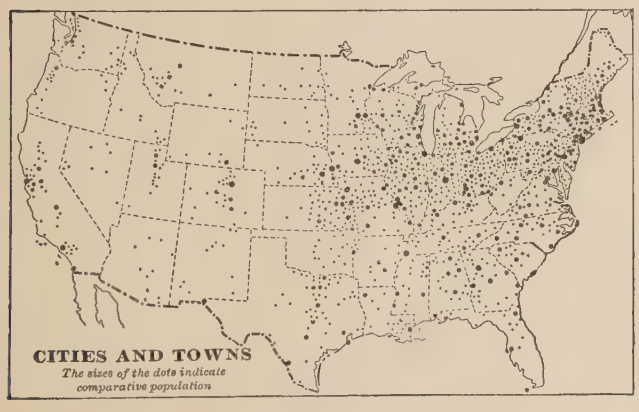
TOPICS FOR ORAL OR WRITTEN WORK

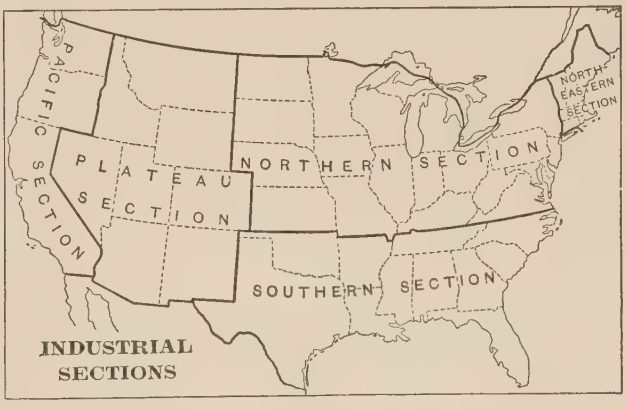
I. Cities and Towns. Where located. Chief industries.

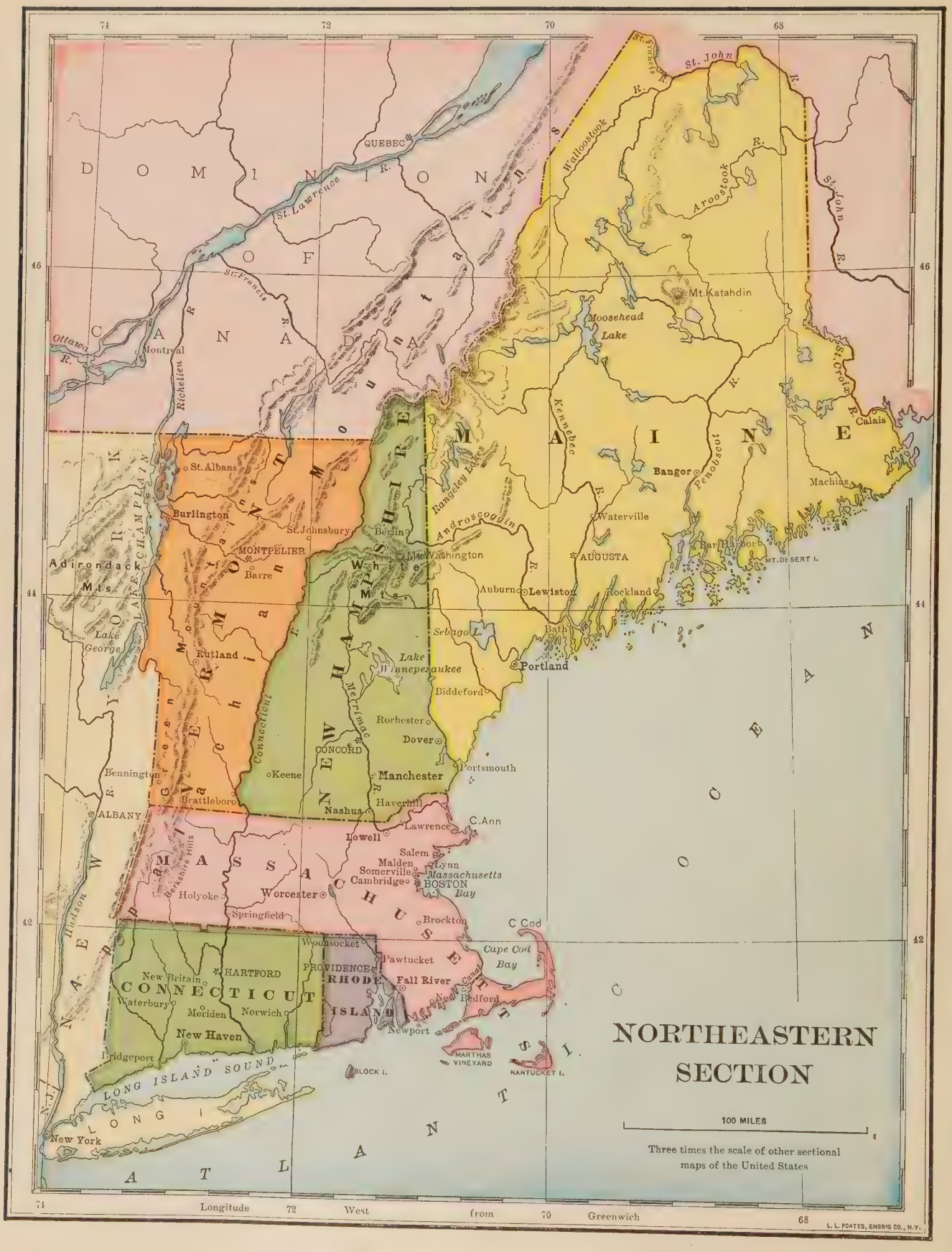
II. Great Manufacturing Region. East of the Appalachian Mountains. West of the Appalachian Mountains.

III. Commerce. Railroads. Ships.

This map shows the five industrial sections of our country. What are the chief products of each section? Make a list of the states in each section.






NORTHEASTERN SECTION
100 MILES
Three times the scale of other sectional maps of the United States
Longitude 74 72 70 68 West from Greenwich
L. L. POATES, ENGRG CO., N.Y.
DOMINION OF CANADA
QUEBEC
Montreal
St. Lawrence R.
Ottawa R.
Richelieu R.
St. Francis R.
Appalachian Mountains
St. John R.
Wallostook R.
Aroostook R.
St. Croix R.
Calais
Mt. Katahdin
Moosehead Lake
Kennebec R.
Penobscot R.
Bangor
Machias
Waterville
AUGUSTA
Bar Harbor
MT. DESERT I.
Auburn
Lewiston
Rockland
Androscoggin R.
Rangeley Lakes
MAINE
NEW HAMPSHIRE
VERMONT
Green Mountains
Connecticut R.
Merrimac R.
St. Albans
Burlington
St. Johnsbury
Berlin
MONTPELIER
Barre
Mt. Washington
Adirondack Mts.
LAKE CHAMPLAIN
Lake George
Rutland
Lake Winnepesaukee
Sebago L.
Bath
Portland
Biddeford
Rochester
Dover
CONCORD
Keene
Manchester
Portsmouth
Bennington
Brattleboro
Nashua
Haverhill
ALBANY
Lawrence
C. Ann
Lowell
Salem
Malden
Lynn
Somerville
Massachusetts Bay
Cambridge
BOSTON
Berkshire Hills
Holyoke
Worcester
Springfield
Brockton
C. Cod
Cape Cod Bay
Woonsocket
Pawtucket
PROVIDENCE
RHODE ISLAND
Fall River
New Bedford
Canal
HARTFORD
New Britain
CONNECTICUT
Waterbury
Meriden
Norwich
New Haven
Newport
MARTHAS VINEYARD
NANTUCKET I.
BLOCK I.
Bridgeport
LONG ISLAND SOUND
LONG I.
New York
Hudson R.
N.J.
ATLANTIC OCEAN

NORTHEASTERN SECTION

PHYSICAL FEATURES AND RESOURCES

Name the six states in the Northeastern Section of our country. Name and locate the capital of each. (The capitals are marked on the map thus *) Between and across what states does the Connecticut River flow? Into what water does it flow? Which state has no seacoast? What lake borders it? Which states are mountainous?

The Northeastern Section is often called New England. Each of the six states is much smaller than most of the other states in the Union. (See map, p. 37.) The map of this small section is therefore drawn on a larger scale than the maps of the other sections.

Lying far north, and near the ocean, New England has cool, moist summers, and cold winters with much ice and snow. The surface is hilly, and there are mountains in the west and northwest. In the valleys are hundreds of ponds and lakes. The streams are rapid and furnish abundant water power for turning machinery. The coast has many deep bays, with excellent harbors, and toward the northeast it is high, rocky, and fringed with rocky islands.

EAGLE LAKE, MAINE.

The White Mountains, the Green Mountains, the Berkshire Hills in western Massachusetts, the beautiful lakes, and the many seashore resorts of New England are visited every summer by thousands of people from all over the country.

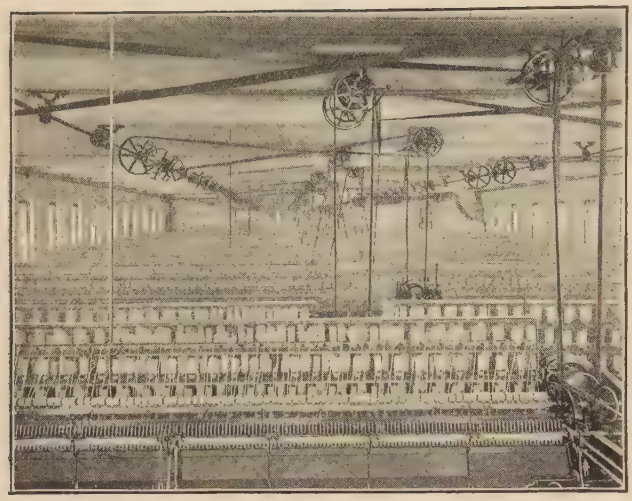
GRANITE QUARRY, VERMONT.

Except in the northern part, where there are extensive forests, New England has many cities and towns, and is more densely peopled than any other part of the country. Massachusetts has about as many people and as much wealth as all the other states of the section together.

On the uplands of the section the soil is thin and stony. Most of the farming is done in the valleys and in the neighborhood of the cities, where the soil is carefully cultivated. Hay, vegetables, and apples are the chief crops, and are produced mostly in Massachusetts, Maine, and Vermont, the potato crop of northeastern Maine being noted. Some tobacco is raised in the lower Connecticut valley. Butter and cheese are produced in Vermont and Maine. But most of the food eaten in New England is brought from outside of the section.

Ice is gathered from the rivers and ponds of Maine for shipment to other states, and maple sugar is made in Vermont. Great quantities of codfish are caught by New England fishermen in the waters south of Newfoundland, and fish are sent all over the Union, and exported.

Much granite for building and for paving streets is quarried, chiefly in Vermont, Maine, and Massachusetts; and fine marble and slate are quarried in Vermont.



Spinning Yarn in a Cotton Mill.

TOPICS FOR ORAL OR WRITTEN WORK

I. Physical Features. Location. Surface. Climate.
II. States. Names. Most populous and richest.
III. Raw Products. Farm. Sea. Quarry. Others.

MANUFACTURES, COMMERCE, CITIES

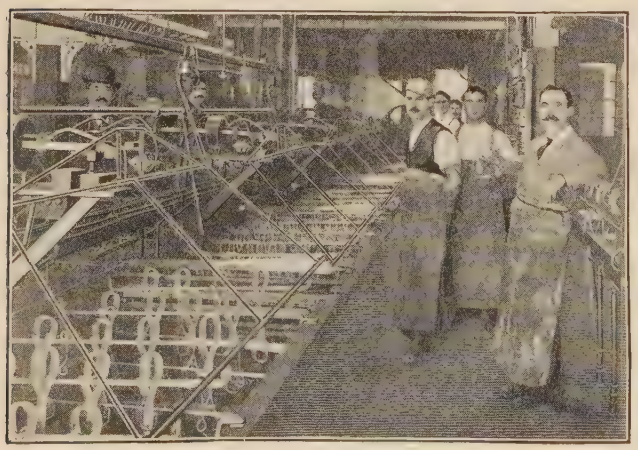
Manufacturing and commerce are the industries upon which the wealth of New England depends, and are of far greater importance than all other industries in the section. The weaving of cotton and woolen cloth and the making of shoes are the most important manufacturing industries. Other noted manufactures are clothing, paper, rubber goods, jewelry, and all kinds of hardware, tools, and fine machinery.

Nearly all of the raw materials and fuel used in this manufacturing have to be brought great distances to New England. The cotton comes from the Southern states; the wool from the western highland and from Australia and South America; the rubber and hides from South America; and the coal, iron, and steel chiefly from Pennsylvania.

There are many cotton and woolen mills and great shoe factories in each of the six states of the section, but they are most numerous in Massachusetts.

Cotton is brought to the mills in bales. It is first cleaned, and then carded and combed into slender ropes of loose fiber. These are twisted and spun into yarn, which is then placed upon the looms, and the quick shuttle, darting from side to side, weaves it into cloth. Thousands of men, women, and girls are employed in the cotton factories. Among the many cities specially noted for cloth making are Fall River, New Bedford, Providence, Lowell, Lawrence, and Manchester. Find these cities on the map.

Thousands of workmen also are employed in the shoe factories of New England. They run the machines on which millions of pairs of shoes are made each year. In some towns the making of shoes is almost the only business carried on. The greatest centers in the



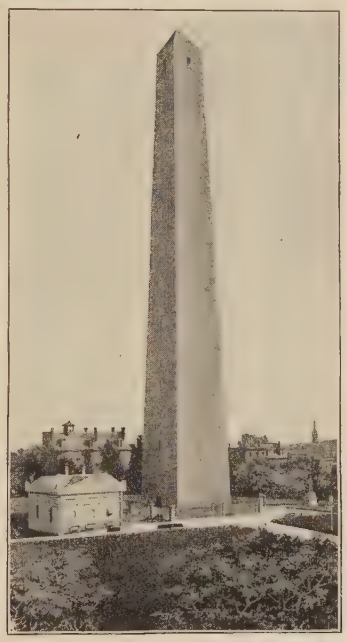
Plating Silver Ware.

Interior of a Shoe Factory.

LOGS AT THE SAWMILL.

United States for the manufacture of shoes are Brockton, Lynn, and Haverhill, in eastern Massachusetts. Find these places.

Paper is made from rags, or from wood reduced to a pulp by grinding it in water. Paper mills and sawmills are most numerous in western Massachusetts, and in Maine, New Hampshire, and Vermont, where there are forests. Holyoke, in Massachusetts, is the most noted paper-making center, and Bangor, in Maine, is a great lumber market. Find these places on the map.



BUNKER HILL MONUMENT.

The factories of rubber goods, jewelry, fire-arms, machinery, and hardware are chiefly in Massachusetts, Rhode Island, and Connecticut. Among the cities engaged in such manufacturing are Worcester, Springfield, Malden, Providence, New Haven, and Hartford. Find these cities. There are many other important manufacturing cities in the New England states.

Boston is the largest and most important city in the section. In what state is it? It is a great seaport. It receives much of the raw material used in New England, and it ships much of the manufactured product. Railroads leading to Boston from all parts of New England, and from the West, bring to it the trade of nearly the entire section; and it is the greatest wool market in the whole United States. Much manufacturing of many kinds, but especially of boots and shoes, ready-made clothing, and machinery is done in the city.

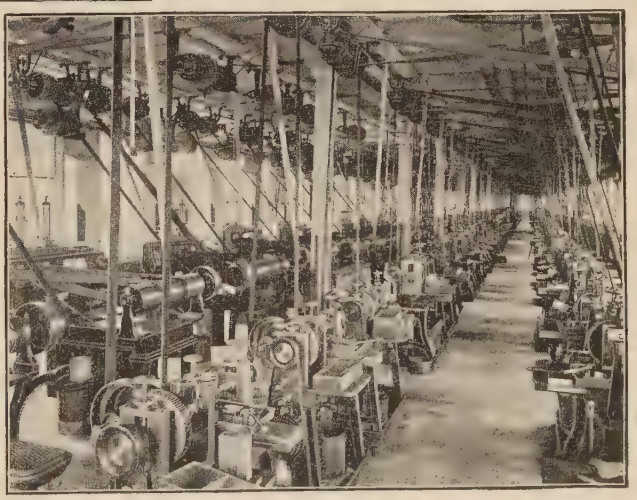
Boston and the neighboring city of Cambridge have long been educational and literary centers, and in or near them many great authors, such as Longfellow, Lowell, Emerson, Holmes, and Hawthorne, lived and wrote. Bunker Hill, where one of the early battles of the Revolutionary War was fought, is now within the city of Boston.

Portland, the largest city and railroad center of Maine, and Providence, the second city of New England, are seaports with fine harbors. Worcester, Springfield, and New Haven are among the many important railroad centers.

TOPICS FOR ORAL OR WRITTEN WORK

I. MANUFACTURES. Cloth. Shoes. Others.

II. CITIES. Boston. Other commercial centers.



A GUN FACTORY, MASSACHUSETTS.

NORTHERN SECTION

PHYSICAL FEATURES

What mountain system crosses the eastern part of the Northern Section? What great river flows southward near the central part? Name the seven states west of the Mississippi River; the six states nearest the Mississippi on the east; the seven states nearest the Atlantic coast. Write a list of the states in each group, with the capital of each state.

What three bays are on the east coast? What five large lakes are in the north? What is the largest eastern tributary of the Mississippi River? the largest western tributary? Can you find any state in the section that is not bordered or crossed by one or more of these rivers, lakes, or bays?

The Northern Section extends westward from New England and the Atlantic Ocean halfway to the Pacific Ocean. The section is very large. It includes twenty states, and covers about one third of our country. The single state of Missouri is larger than the whole of New England.

The greater part of the section is lowland, with a smooth, gently sloping surface. Almost the only slopes too steep for farming are in the Appalachian Mountains, but even among those mountains there are many wide and fertile valleys. The seven eastern states are called the Middle States because this group lies near the middle of our Atlantic coast.

West of the mountains the surface slopes very gently down to the Great Lakes and the Mississippi River. There are few steep slopes, except along the streams, and nearly everywhere the soil is deep and fertile. The six states in this region are called the East Central States.

Westward from the Mississippi River the surface slopes gradually upward, and the extreme western part of the section lies on the Great Plains of the Rocky Mountain highland. The seven states of this region are called the West Central States.

The winters throughout the Northern Section bring ice and snow, but the summers are

long and hot. There is ample rainfall for farming, except in the extreme west. Thus the climate, surface, and soil of the section are suitable for farming, which is the most important industry. It is one of the greatest food-producing regions of the world. This section contains more people than all the rest of the United States.

TOPICS FOR ORAL OR WRITTEN WORK

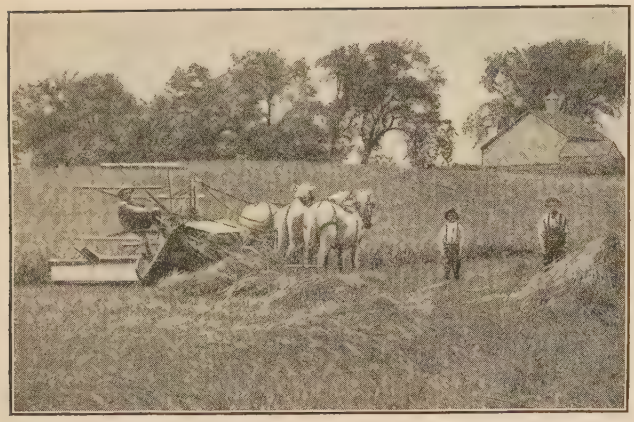
I. LOCATION. Extent. States. Three state groups.
II. SURFACE AND SOIL. Middle States. East Central States. West Central States.
III. CLIMATE. Heat. Rainfall.
IV. PEOPLE. Comparative population. Chief industry.

CROPS

The principal crops of the Northern Section are grain, hay, vegetables, fruit, and tobacco.

Certain grasses, cultivated chiefly for their seeds, are called *grains*. Wheat, corn, and oats are the most important grains of this section. What are the chief uses of the grains? (p. 38.)

After the land is plowed, the seed grain is usually planted with machines called *drills*. The wheat and oats grow up as slender green stalks about three feet high, each with a cluster of seeds at the top. The corn plant is much larger. The stalk is thicker and it grows higher than a man's head. At the top is a beautiful



HARVESTING OATS.

yellowish tassel, while the ears of corn and long green leaves grow from the sides of the stalk lower down.

When the wheat and oats ripen, in summer, the plants turn yellow, and the farmers are then busy in gathering or harvesting their crops. Wheat and oats are cut by reaping machines, and the grain is separated from the straw and chaff by thrashing machines. Corn is generally harvested by hand, in the autumn.

Large crops of grain are raised in all parts of the section, but particularly west of the Appalachian Mountains. Illinois, Iowa, Indiana, Missouri, Nebraska, Ohio, and Kansas are great corn-growing states. North Dakota, Kansas, Minnesota, Nebraska, and South Dakota produce large crops of wheat (map, p. 38).

GATHERING APPLES.

Many grasses have much smaller seeds than the grains, but their tender stalks, when dried into *hay*, form a valuable food for animals. The hay crop throughout this section is very heavy. It is especially large in New York and Pennsylvania.

Vegetables and fruits supply more food for man than any other crop of the section, except grain. Potatoes are the chief vegetable. They are *tubers*, or parts of the underground stems of the potato plant. Apples and berries are the chief fruits of the section.

Fruit and vegetables are grown in all parts of the section. The crops are largest in the east, where the many large cities afford a ready market. For such small states, Delaware, New Jersey, and Maryland produce very large crops of vegetables and fruit.

TOBACCO SALES ROOM.

Tobacco, the largest crop of the section not used for food, is produced in very large quantities in Kentucky and Virginia. On the map, p. 47, find Louisville in Kentucky, and Richmond in Virginia. These cities are great tobacco markets. Cigars and chewing tobacco are made there and in many other cities.

TOPICS FOR ORAL OR WRITTEN WORK

I. GRAINS. Define. Chief kinds. Uses. Where grown.
II. HAY. Define. Use. Where largely grown.
III. VEGETABLES AND FRUIT. Kinds. Where grown.
IV. TOBACCO. Where largely grown. Markets.

A Flock of Lambs.

ANIMAL PRODUCTS

In the Northern Section, where so much food for animals is grown, vast numbers of cattle, hogs, and horses are raised. The cattle and hogs are raised chiefly for their flesh, which is converted into beef or pork, to be eaten by man. So many animals are killed every year that this section supplies all parts of the United States with meat, and much is exported to foreign countries.

Many thousands of cattle are raised and kept to give milk. Most of the dairy products (milk, butter, and cheese) of the country come from this section.

Animals are raised in all parts of the section, but mostly in the western part. The great corn-growing states raise the most cattle and hogs for making meat. But New York and Pennsylvania, which have the largest hay crop, raise the most dairy cattle, and with Wisconsin and Iowa have the most cheese and butter factories.

Many million chickens are raised for their flesh and their eggs, and great flocks of sheep for their flesh and their wool. These animals are most numerous in the East Central States, Ohio and Michigan being noted for the production of sheep and wool.

Along the Atlantic coast thousands of men make their living by catching and selling fish, oysters, clams, and crabs. The most valuable of these are oysters. They are gathered in all the bays, but chiefly in Chesapeake Bay by the oystermen of Virginia and Maryland.

The oyster comes from a tiny egg, and floats about in the water until it grows to the size of a small pea. Then it fastens itself to some hard object on the bottom, and its shell begins to grow. After oysters grow for four or five years they are large enough for the market, and are gathered with long-handled tongs worked from boats floating on the water above the oyster beds.

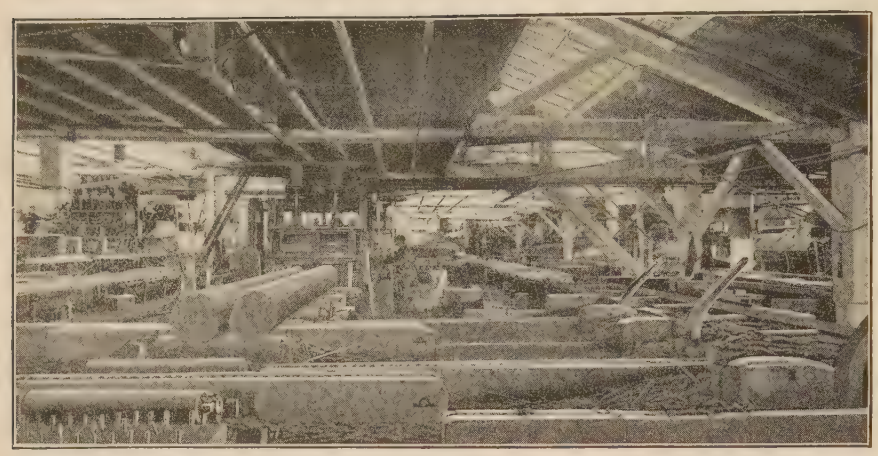
TOPICS FOR ORAL OR WRITTEN WORK

I. Chief Animals. Uses. Where raised.
II. Sheep and Poultry. Uses. Where raised.
III. Fisheries. Fish. Oysters. Where obtained.

LUMBER AND MINERALS

Most lumber comes from evergreen trees — pine, spruce, and hemlock. This kind of lumber is called soft wood, and is much used in building. The oak, maple, elm, and ash are

A Dairy Farm.



INTERIOR OF A SAWMILL.

called hard-wood trees. Their wood is used for woodwork which requires strength or toughness, such as furniture, carriages, and flooring.

The forests of the Northern Section supply most of the lumber used in the United States. Great pine forests cover the northern part of Michigan, Wisconsin, and Minnesota, and south of the pine forests there is much valuable hard wood. From the forests of these states come most of the saw logs of the section. There are also large forests of both soft and hard woods along the Appalachian Mountains. Pennsylvania and West Virginia supply the most logs from this region.

In sawmills the logs are sawed into rough lumber. This is sent to all parts of the country to be used in building, or to be made smooth in planing mills and manufactured into the many articles made of wood.

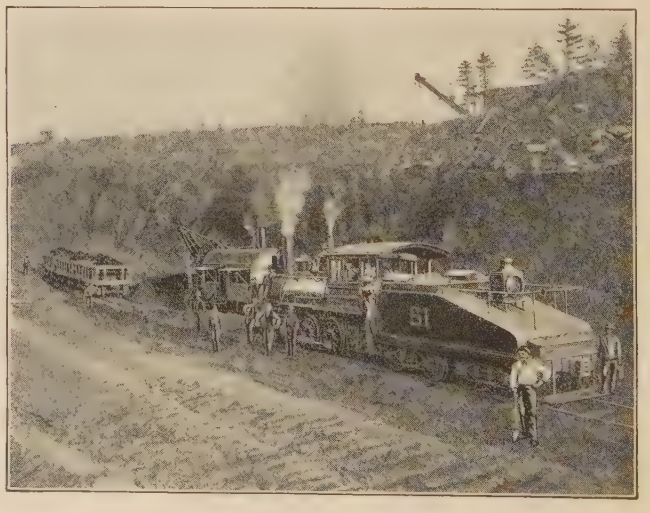
In New York, Wisconsin, and Pennsylvania forest trees are ground into wood pulp and made into paper.

The United States produces more coal than any other country in the world, and most of it comes from this section. The map (p. 40) shows that there are coal regions in fifteen states of this section. Coal is mined in each of these states. Make a list of them, beginning in the east. Most of it is mined in Pennsylvania, which supplies about half the coal mined in the United States. Much is also mined in West Virginia, Illinois, and Ohio.

Our greatest mines of iron ore are in the Mesaba range in Minnesota, and much iron ore and copper ore are mined in northern Michigan. In Minnesota the iron ore lies near the surface of the ground, and is so soft that it is dug up with steam shovels.

The metal iron is obtained by melting the ore in tall smelters, or blast furnaces. This needs a very hot fire. A hot fire is needed also to change the iron into steel. Coal or often coke, made by roasting coal in ovens, is the best fuel for making iron and steel.

No coal is found near the great iron mines of Minnesota and Michigan. So the ore is loaded on boats at various harbors on Lake Superior, and carried to ports on the other lakes nearer the coal fields. Some of this ore is smelted at Chicago, and much of it is smelted at Cleveland and near-by ports on Lake Erie; but most of it is sent on by railroad from Lake Erie to be smelted in the



MINING IRON ORE WITH A STEAM SHOVEL.

BLAST FURNACES.

coal fields of Pennsylvania, near Pittsburgh. Find these three cities — Chicago, Cleveland, and Pittsburgh — on the map (p. 47).

Much petroleum and natural gas are obtained from the oil and gas wells in this section, mostly in Illinois, West Virginia, Ohio, and Pennsylvania. The petroleum is conveyed by pipe lines to refineries near Chicago, Cleveland, Philadelphia, and New York. Find these cities. The natural gas is conveyed in pipes to places where it is used for fuel.

Most of the salt used in the United States comes from salt springs and salt wells near Rochester and Syracuse in New York state, and near Saginaw in Michigan. Find these cities.

TOPICS FOR ORAL OR WRITTEN WORK

I. FORESTS. Kinds. Location. Lumbering states.
II. COAL. Comparative amount. Where mined.
III. IRON ORE. Where mined. Where smelted. Why?
IV. PETROLEUM AND GAS. Where obtained. How handled. Where used.
V. SALT. Where obtained.

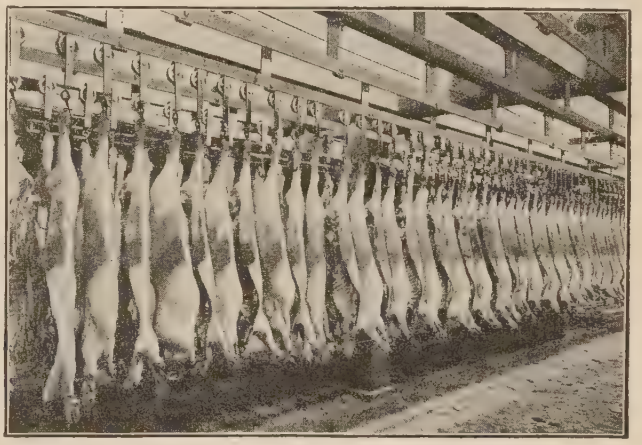
MANUFACTURING AND COMMERCE

Manufacturing is done in all parts of the section, but chiefly in the eastern and central parts where the towns are closest together. (See map, p. 41.)

New York city, Chicago, and Philadelphia are by far the greatest manufacturing centers of the country. St. Louis, Pittsburgh, Baltimore, Cincinnati, Cleveland, Newark (N.J.), Milwaukee, and Buffalo are other manufacturing centers. Find them on the map, p. 47.

The most important manufactures are *meat*, *flour*, *iron* and *steel*, and *lumber*, and things made of iron, steel, and wood. All of these things are made from raw materials produced in the section.

The chief centers for killing cattle and hogs and packing meat are Chicago, Kansas City (Kans.), Omaha (Neb.), and Indianapolis. These cities are in the corn region, where food to fatten the animals is plentiful. When the animals are killed, all parts are used; the fat is made into oleomargarine or lard, the hides are tanned into leather, and even the horns, hoofs, and bristles are used.

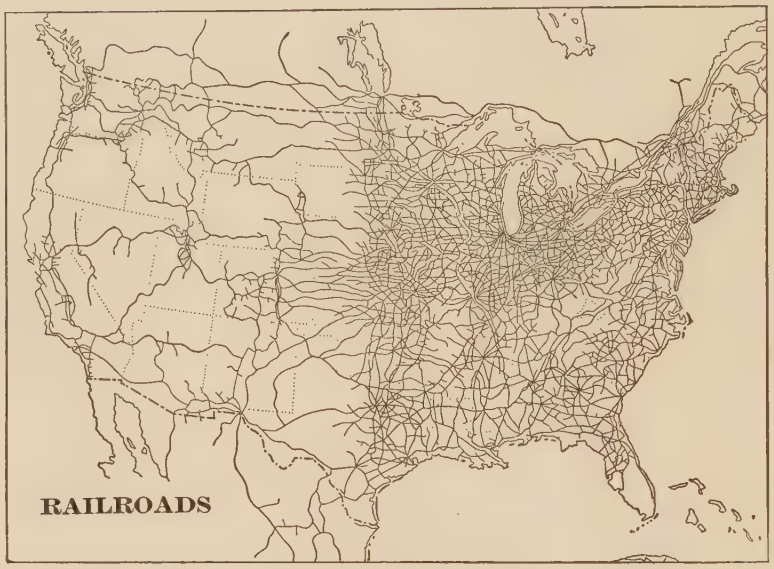


PORK READY FOR SHIPMENT.

Flour is made by crushing grains of wheat between steel rollers turned by machinery. Minneapolis, in the wheat region, is the great flour-milling center. Much flour is made also in Milwaukee, Toledo, and many other cities.

Pittsburgh is the great iron- and steel-making center, but these metals are made also in Chicago, Cleveland, and elsewhere. Machinery, rails, beams, and other steel articles are made at these and many other cities.

Most of the sawmills are in the great forest regions. Nearly every city in the section has planing mills and manufactories of wooden articles. Much furniture is made at Grand Rapids (Mich.), and farming machinery at Chicago, and at Springfield in Ohio.



The densely peopled coast plain near the good harbors of New York city, Philadelphia, and Baltimore is a very important manufacturing region. In this region kerosene is refined from petroleum for shipment to all parts of the world; white sugar is made from raw sugar received from the West Indies; leather is tanned in Philadelphia, Newark, and Wilmington (Del.); carpets and other woolen goods are woven in Philadelphia, and silk in Paterson (N.J.), largely from imported raw material. Engines and machinery of all kinds are made throughout this region, and ocean steamships in Philadelphia and Baltimore.

To aid the vast commerce in all these and many other manufactures, a network of railroads connects the cities of the section, as is shown on the map above. But as it is cheaper to carry freight by boat than by railroad, much heavy freight is sent on the Great Lakes, the Mississippi River and its branches, and on the Atlantic Ocean.

The Erie Canal and the Hudson River form a water route of great value, by which canal boats may pass from Lake Erie at Buffalo to the ocean at New York city. Another important but much shorter canal has been dug around the rapids, or *sault* (soo), in St. Marys River between Lake Superior and Lake Huron; and to avoid Niagara Falls, the Welland Canal through Canada connects Lake Erie and Lake Ontario. By using one or both of these shorter canals, boat loads of wheat have passed from Chicago or Duluth through Lake Ontario and the St. Lawrence River to Europe.

TOPICS FOR ORAL OR WRITTEN WORK

I. Manufacturing. States. Cities.
II. West of Mountains. Chief kinds of manufactures. Great centers: of meat packing, flour milling, iron and steel products, wood products. Other manufactures. Source of raw materials.
III. Near the Great Seaports. Chief kinds. Great centers of each. Sources of raw materials.
IV. Aids to Commerce. Railroads. Natural water routes. Canals.

GREAT CITIES

Near the Atlantic Coast. — New York, our largest city, ranks second in the world in population. It lies on the mainland and on several islands at the mouth of the Hudson River. (See corner map, p. 47.) It has a fine harbor, and is reached so cheaply from the interior through the Hudson-Mohawk valley and other railroad routes, that its commerce greatly exceeds that of any other city in the United States. It is the main gateway of the country for both freight and travelers. The chief

exports are meat, machinery, kerosene, copper, grain, and flour; while manufactures and raw materials are imported. The chief manufactures of the city are clothing, white sugar, and books and newspapers. New York is the chief money-lending center in the country.

Philadelphia, on Delaware River, is our third city in population. It is a great seaport, coal market, and manufacturing center. Woolen and cotton goods, carpets, clothing, printed matter, machinery, locomotives, steel ships, refined sugar and petroleum, and leather are made here.

Baltimore, on Chesapeake Bay, ships much grain, meat, petroleum, and coal. The chief manufactures are clothing, metal products, tobacco, and canned vegetables, fruits, and oysters.

Washington is the capital of the nation, and our most beautiful city.

THE HEART OF CHICAGO.

On the Great Lakes. — Chicago, near the head of Lake Michigan, is in the heart of the grain region and near the Illinois coal field. It is so cheaply reached by the lake, and by railroads which center here from every direction, that it has grown rapidly, and is our second city in size and importance. It is the greatest meat-packing center in the world, the greatest grain market, and one of the greatest lumber markets and manufacturing centers. It is a great center also for the manufacture of iron and steel, machinery, and clothing.

Milwaukee is a grain and lumber market. Iron, steel, and machinery, beer, leather, and flour are manufactured.

Detroit has a large commerce, and makes automobiles, machinery, tobacco, and drugs.

Cleveland, the largest city of Ohio, is a great receiving point for iron ore and lumber. Its chief manufactures are iron and steel, machinery, ships, kerosene, and packed meats.

Buffalo has a vast commerce in grain, flour, live stock, and lumber shipped by railroad or the Erie Canal. Its chief manufactures are packed meats, machinery, flour, and linseed oil.

On the Mississippi and Ohio Rivers. — St. Louis is the largest city in the Mississippi valley. Through the Mississippi, Missouri, and Ohio rivers, and many railroads, it can be easily reached from all quarters of the valley. It is the trading center of the southwest part of our country. Its chief manufactures are boots and shoes, tobacco, meat, beer, and machinery.

Pittsburgh forms a large center of population. Because of the abundance of coal, petroleum, and natural gas, it has become the greatest iron- and steel-manufacturing center of the country. Much glass and coke are made. Much coal is shipped down the Ohio River.

Cincinnati manufactures packed meats, machinery, clothing, shoes, and liquors.

Louisville is a great tobacco market.

Minneapolis, at St. Anthonys Falls, and St. Paul, at the head of navigation on the Mississippi, form a single great center of population. Minneapolis is one of the greatest flour- and lumber-milling centers in the world.

TOPICS FOR ORAL OR WRITTEN WORK

I. CITIES OF THE MIDDLE STATES. New York. Philadelphia. Other cities.

II. CITIES OF THE EAST CENTRAL STATES. Chicago. Other cities.

III. CITIES OF THE WEST CENTRAL STATES.

SOUTHERN SECTION

SURFACE AND PEOPLE

Which states of this section border on the Atlantic? Which border on the Gulf of Mexico? Which have no seacoast? What mountains are in the extreme west? What mountains are in the eastern part? What great river crosses the central part? What states does it border? Name several other rivers which flow to the Gulf; several which flow to the Atlantic; two which flow to the Ohio. Name and locate the capital of each state.

This section extends across the southern part of our country from the Atlantic to the Rocky Mountains. It is smaller than the Northern Section, but it covers about one fourth of the United States and includes eleven states. One of these, Texas, is four times as large as New England. It is the largest state in the Union.

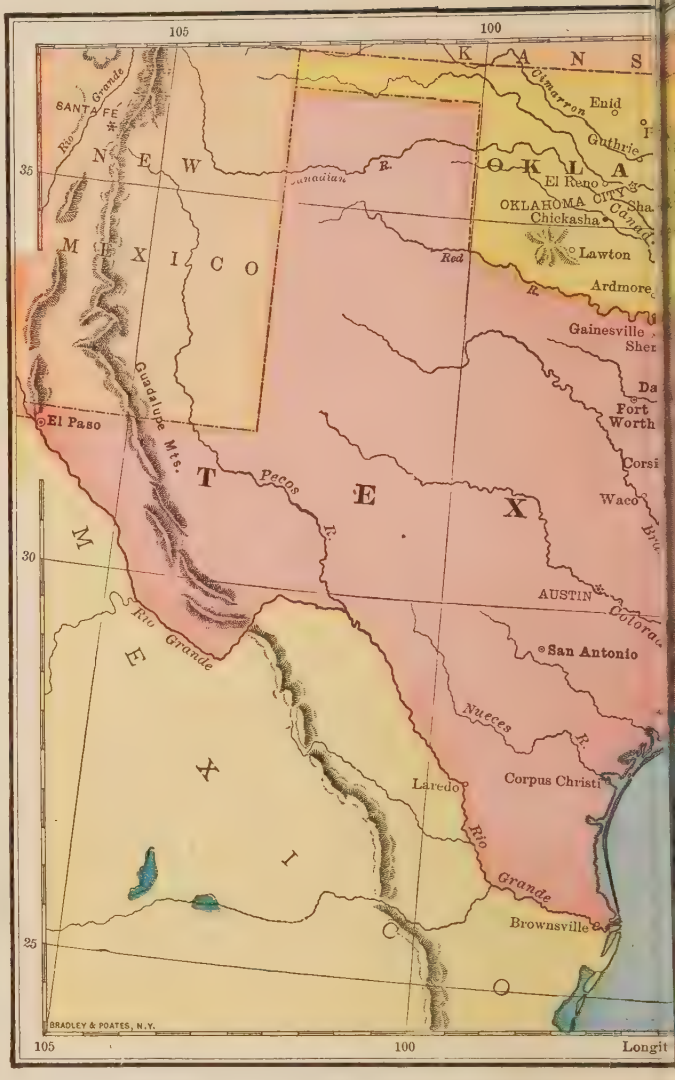
The highest part of the section is the Guadalupe range of the Rocky Mountains, in the extreme west. East of this the high, smooth surface of the Great Plains (p. 32) slopes gently down to the wide lowlands of the Gulf coast and the Mississippi valley.

East of the Mississippi River the surface is mostly a smooth lowland plain, but it is broken in the north by the Appalachian Mountains. From these mountains rivers flow across the plain, northwest to the Ohio, southwest to the Gulf, and southeast to the Atlantic.

The soil is generally fertile, but the coast region is sandy, with many swamps, particularly in the low peninsula of Florida. The coast is fringed with shallow salt-water *lagoons* or *sounds*, which are separated from the ocean by low, sandy islands.

The Mississippi flows through the section in a wide flood plain (p. 27). This is very fertile, but contains many swamps and is sometimes overflowed by the river. Much of the southern part of Louisiana lies in the great delta (p. 27) which this river has built out into the Gulf.

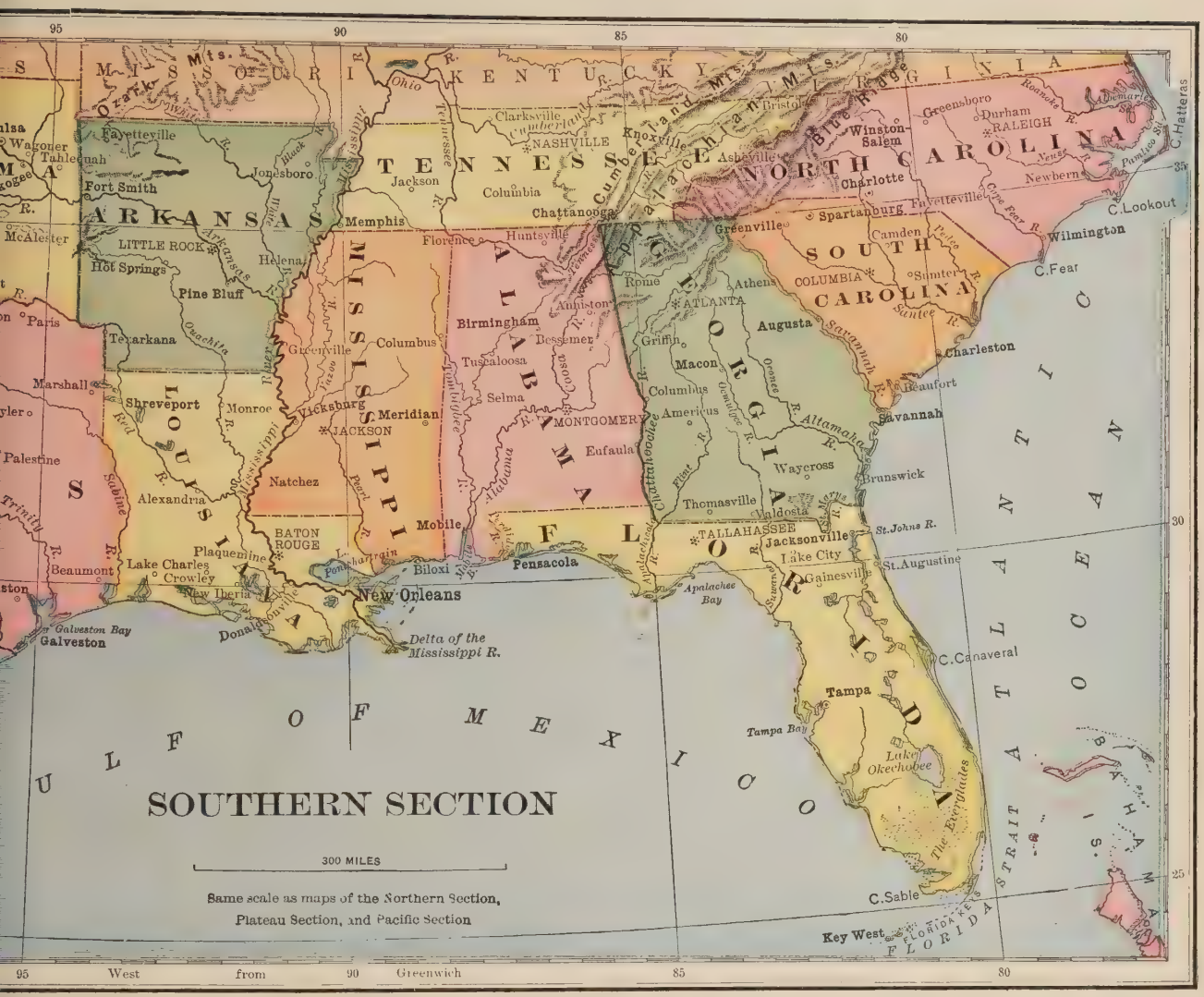
The summers are long, and the winters are so mild that snow seldom lies on the ground.



There is ample rainfall for agriculture, except on the Great Plains of the west.

Nearly one fourth of the people of the United States live in this section, and most of them are engaged in farming. It was once believed that white men could not work in the fields in such a warm climate, and so thousands of negroes were brought to this section from Africa, to do this work. About one third of the people now are negroes, and they do much of the work on the farms. In some of the states there are about as many negroes as white people.

In Oklahoma there are more Indians than in any other state in the Union. Many of them are farmers.



TOPICS FOR ORAL OR WRITTEN WORK

I. LOCATION. Extent of Southern Section. States included.

II. SURFACE. Highland. Lowland. Mountains. Slopes. Chief rivers. Coast.

III. CLIMATE. Heat. Rainfall.

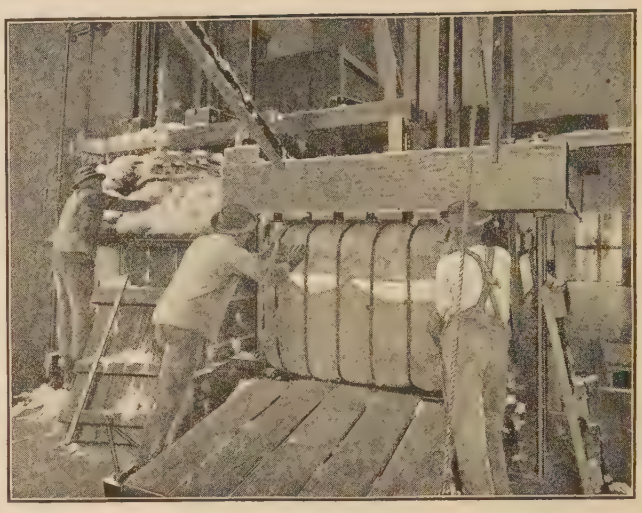
IV. PEOPLE. Number. Industries. Negroes. Indians.

FARM AND FOREST PRODUCTS

For what is cotton used? (p. 38.) Cotton is by far the most valuable product of this section. More than half of the cotton produced in the entire world is grown here. It is grown in every state of the Southern Section. The crop is largest in eastern Texas, but it is also very large in Georgia, Mississippi, Alabama, and South Carolina.

Cotton is the woolly hair, or lint, that grows around the seed of a plant about three or four feet high. When the seed pods, or bolls, ripen, they burst and the fluffy cotton hangs from them in white balls. The cotton is generally picked by hand. The gathering usually begins in August and continues through the fall. The lint, or fiber, is separated from the seeds by a machine called a *gin*, and the cotton is then pressed and bound in bales ready for shipment. From the seeds of the plant is made a fine quality of oil, which is often used in place of olive oil. The *cake*, or substance

PICKING COTTON.



BALING COTTON.

that remains after the oil is pressed out of the seeds, is used as a food for cattle and as a *fertilizer* to enrich the soil.

Other crops are corn and vegetables and fruit in all the states; wheat in Texas, Oklahoma, and Tennessee; and tobacco, chiefly in North Carolina; but all these crops are comparatively small. The sweet potato is the chief vegetable of the South. In the eastern part of the section many peaches and strawberries are raised for the Northern market, many watermelons in Georgia, and many oranges and lemons in Florida.

In Louisiana the most important crop, after cotton, is sugar cane. It is grown in the rich soil of the Mississippi delta. Sugar cane looks much like the corn plant, but is somewhat larger. The crop is gathered by cutting the stalks close to the ground. These are sent to the sugar mills, where their sweet juice is pressed out between heavy rollers. The juice is boiled until it forms brown sugar and molasses. The brown or raw sugar is then refined into white sugar.

CUTTING SUGAR CANE.

In the low regions of Louisiana, Texas, Arkansas, and South Carolina, rice also is raised. Rice is a kind of grain something like wheat, but generally it grows in fields which can be flooded with water after the seed is planted. The grain is separated from the straw by thrashing, but must then be sent to the rice mills, where the hulls are removed and the grain polished before it is ready for market.

Many cattle are raised on the dry, grassy plains of Texas and Oklahoma, and are sent north to be fattened and made into beef. More mules are raised and used in this section than in all the rest of the Union.

The dry western part of the section is almost treeless, but in the central and eastern parts are extensive forests. In the hilly regions of Arkansas, Tennessee, and North Carolina are valuable hard-wood forests; but in the sandy coast

plain the forests are mostly tall and stately trees of southern or yellow pine, which supply valuable building timber, used especially for flooring. From the sap of these pines much turpentine and rosin are made. In the swamps are dense canebrakes and valuable cypress trees, and in the forests of the far

GATHERING PINE SAP, GEORGIA.

South are great evergreen oaks, palmettoes, and flowering magnolias, which in the Northern states are seen only in greenhouses. The forests of this section supply about one fourth of the lumber cut in the United States.

TOPICS FOR ORAL OR WRITTEN WORK

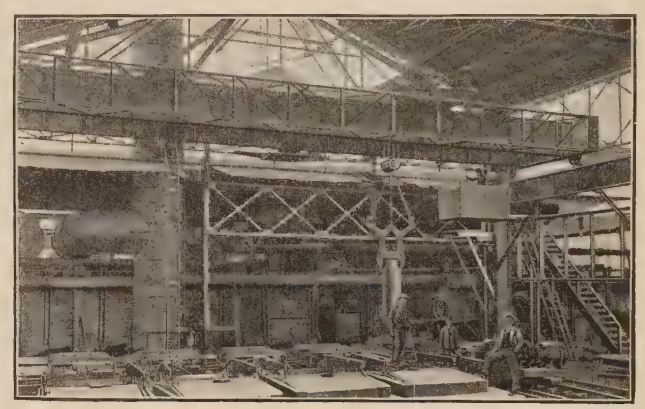
I. COTTON, SUGAR CANE, AND RICE. Describe each. Importance of each.
II. OTHER CROPS. Corn, vegetables, and fruit. Wheat. Tobacco. Where each is grown.
III. ANIMALS. Cattle. Mules.
IV. FORESTS. Hard-wood. Soft-wood. Other trees.

MINING, MANUFACTURING, CITIES

Mining and manufacturing are less important in this section than in the Northern states.

Coal and iron are mined in large quantities near Birmingham, in Alabama, and also near Chattanooga, in Tennessee, and these places are noted centers for the making of iron and steel and metal articles. Coal is mined also in Oklahoma and Arkansas, near Fort Smith. Much petroleum is obtained in eastern Oklahoma, southeastern Texas, and southwestern Louisiana. Marble is quarried in the mountains of Georgia and Tennessee; and phosphate rock, which makes fine fertilizer, is exported from Florida, Tennessee, and South Carolina.

The sawing of lumber and the making of cotton cloth are the most important manufacturing industries. Lumber is manufactured in all the states, especially in Louisiana, Arkansas, and Mississippi. The manufacture of cotton cloth is increasing rapidly in the South.

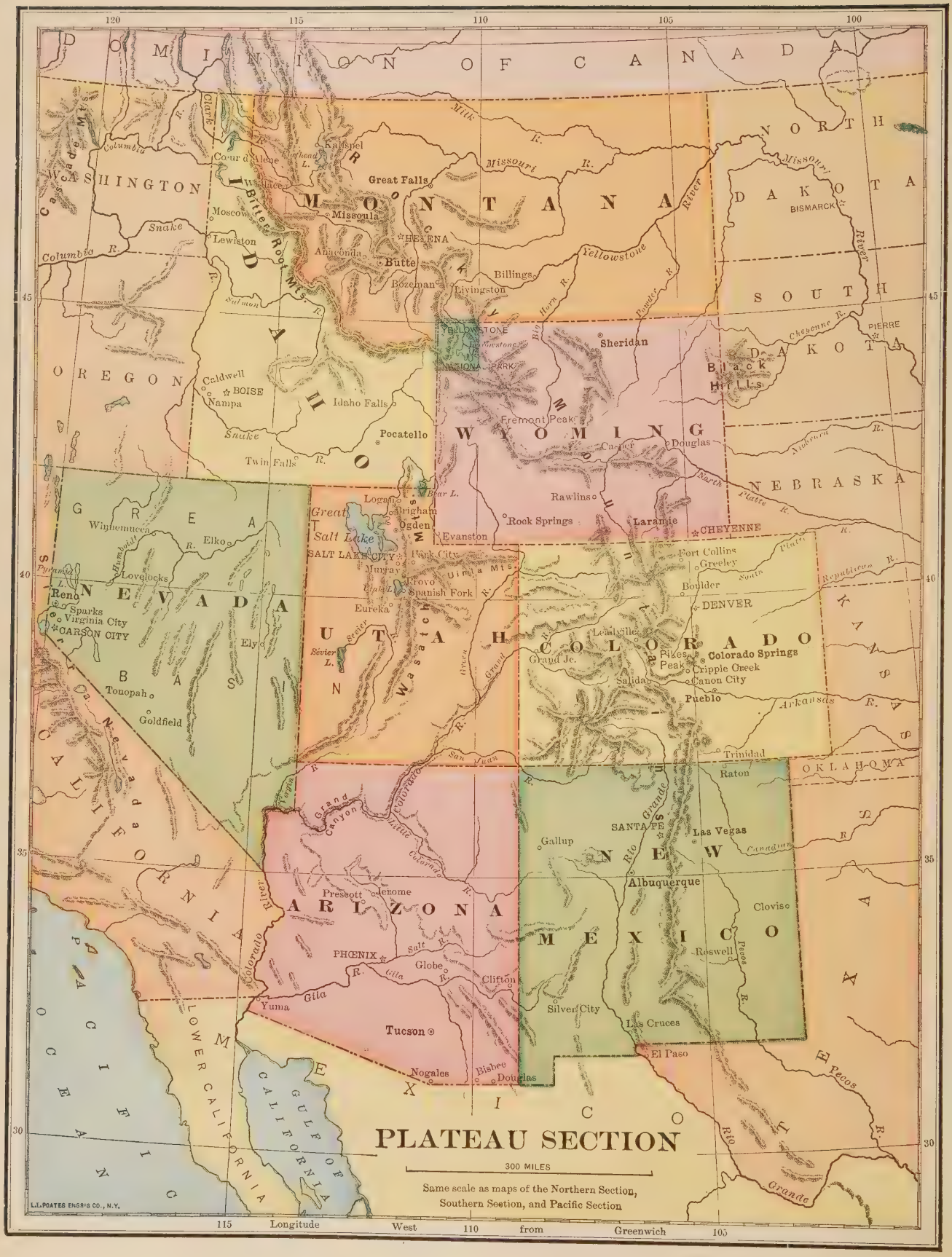


INTERIOR OF A STEEL MILL, ALABAMA.

It is the leading industry in the Carolinas and Georgia. Charlotte, Columbia, Augusta, Macon, and Atlanta are among the many cotton-manufacturing centers in these states.

Other important manufactures of the section are sugar, made mostly in Louisiana; cottonseed oil, made in all the states, especially in Texas; flour, made chiefly in Tennessee and Texas; iron, steel, and foundry products, which come mostly from Alabama and Tennessee; turpentine and rosin, chiefly from Florida and Georgia; smoking tobacco, from North Carolina; and cigars, made from Cuban tobacco, at Key West and Tampa, in Florida.

As less manufacturing is done, there are fewer cities and towns in the Southern Section than in the Northern Section and New


DOMINION OF CANADA
NORTH DAKOTA
SOUTH DAKOTA
MONTANA
WASHINGTON
OREGON
IDAHO
WYOMING
NEBRASKA
NEVADA
UTAH
COLORADO
ARIZONA
NEW MEXICO
CALIFORNIA
OKLAHOMA
KANSAS
Great Falls
Missoula
HELENA
Butte
Billings
Bozeman
Livingston
Sheridan
BISMARCK
PIERRE
Black Hills
Moscow
Lewiston
Caldwell
BOISE
Nampa
Idaho Falls
Pocatello
Twin Falls
Fremont Peak
Douglas
Cheyenne
Rawlins
Rock Springs
Laramie
CHEYENNE
Logan
Brigham
Ogden
Great Salt Lake
SALT LAKE CITY
Park City
Evanston
Winnemucca
Elko
Lovelocks
Reno
Sparks
Virginia City
CARSON CITY
Ely
Tonopah
Goldfield
Eureka
Provo
Spanish Fork
Fort Collins
Greeley
Boulder
DENVER
Leadville
Colorado Springs
Pikes Peak
Cripple Creek
Canon City
Salida
Pueblo
Grand Jc.
Trinidad
Raton
Gallup
SANTA FE
Las Vegas
Albuquerque
Cloviso
Roswell
Silver City
Las Cruces
El Paso
Presott
Jerome
PHŒNIX
Globe
Clifton
Yuma
Tucson
Nogales
Bisbee
Douglas
Grand Canyon
Colorado R.
Gila R.
Salt R.
Rio Grande
Pecos R.
Arkansas R.
Platte R.
Missouri R.
Yellowstone R.
Snake R.
Columbia R.
Green R.
Sevier L.
Bear L.
Uinta Mts.
Wasatch Mts.
Sierra Nevada Mts.
Cascade Mts.
Bitter Root Mts.
Coeur d'Alene
Kalispel
Wallace
Lake Tahoe
Pyramid L.
Humboldt R.
Owyhee R.
Malheur R.
Powder R.
Big Horn R.
Milk R.
Niobrara R.
North Platte R.
South Platte R.
Republican R.
Canadian R.
Pecos R.
Rio Grande
Gulf of California
Lower California
Pacific Ocean
Mexico
PLATEAU SECTION
300 MILES
Same scale as maps of the Northern Section, Southern Section, and Pacific Section
L.L. POATES ENGRG CO., N.Y.
Longitude West from Greenwich
120
115
110
105
100
45
40
35
30

SHIPPING COTTON, NEW ORLEANS LEVEE.

England. The largest cities in the South are small as compared with the largest cities in the North, and they are centers of commerce rather than of manufacture.

New Orleans is much the largest city of the South. It is a great river port on the Mississippi, and is also an important seaport, for ocean steamers ascend the river to its wharves. It is a great shipping point for cotton and for grain brought down the river. Much sugar is made and refined in New Orleans. The French language is still spoken by many of the citizens, who are descendants of the French people who first settled the city about two hundred years ago.

Where are Atlanta, Birmingham, Memphis, and Nashville? They are the largest cities of the section, after New Orleans. Which are river ports? They are all great railroad centers, and Atlanta is called the Gate City on this account. Atlanta manufactures much cotton, Nashville much flour, and Memphis much lumber and cottonseed oil.

Where are Savannah, Charleston, Mobile, and Galveston? They are important shipping points for raw cotton and lumber. Galveston ships as much cotton as New Orleans, and Savannah about half as much. San Antonio, Houston, and Dallas are the largest cities in the western part of the section. Hot Springs in Arkansas is a famous health resort.

TOPICS FOR ORAL OR WRITTEN WORK

I. MINING. Coal. Iron ore. Petroleum. Other.
II. MANUFACTURES. Lumber, states. Cloth, states and centers. Other manufactures.
III. CITIES. New Orleans. Other seaports. Other river ports. Other cities.

PLATEAU SECTION

Which part of the Plateau Section is crossed by the Rocky Mountains? In these mountains find Yellowstone Park. What great tributary of the Mississippi River has its source in this park? What river of the Pacific slope has its source near that of the Missouri? What tributary of the Mississippi has its source in central Colorado? What great river of the Pacific slope has its headwaters near the source of the Arkansas? What river flowing to the Gulf of Mexico rises in southern Colorado? Name the eight states of the section. Name and locate the capital of each state.

The Plateau Section lies on the Rocky Mountain highland and includes the wildest part of our Union. It is larger than the Southern Section, but contains only eight states. The whole section does not contain so many people as Massachusetts. Most of the people are whites, but there are many Indians. The Indians usually live in certain regions reserved for them by the government, and therefore called Indian Reservations.

HOUSES OF THE PUEBLO INDIANS.

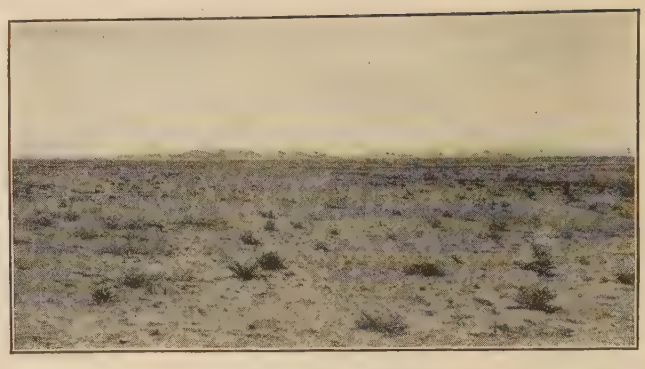
In the east the smooth surface forms part of the Great Plains (p. 32) and lies on the Atlantic slope of America. The western part of the section lies on the Pacific slope. It is a rough highland crossed by many mountain ranges, lines of cliffs, and deep canyons. The canyon of the Colorado River is especially noted.

The central part of the section is crossed by the many ranges of the Rocky Mountains, and is the most rugged and mountainous part of our country. Yellowstone National Park,

GEYSERS IN YELLOWSTONE NATIONAL PARK.

in this section, is famous for its mountain scenery, its canyon, and its *geysers*, or hot springs which every little while spout hot water and steam high into the air. Hunting is not permitted in the Park, and so bears and other wild animals are very plentiful there.

The section is so high and its air is so pure and dry that the climate is healthful, but it is very cold in winter and very hot in summer, especially in the south. This is the driest part of the United States. Part of the Great Basin west of the Wasatch Mountains is a desert. Most of the section, however, has enough rain to support a growth of coarse grasses which make good pasturage. On the mountains so much snow falls in winter that it is not always melted away in summer. The melting snow supplies moisture to forests on the lower mountain slopes, and is the source of most of the streams of the section.



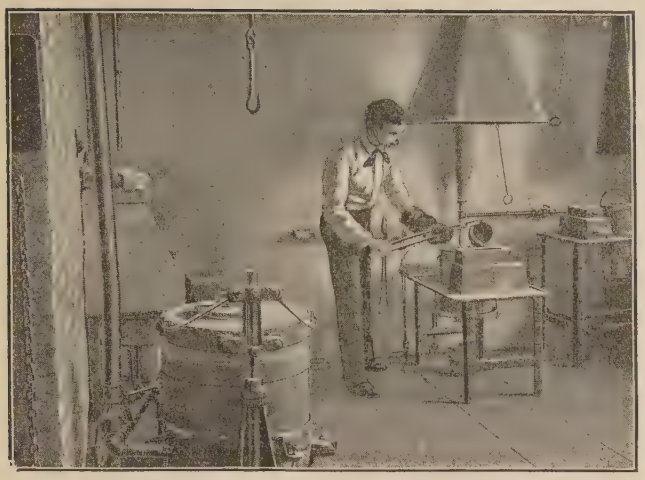
THE DESERT, ARIZONA.

Considerable hay, and some grain, vegetables, and fruit are raised, chiefly in Colorado, Idaho, Montana, and Utah. Sugar beets are grown extensively in Colorado and Utah. Farming, however, is not widely pursued, for in this dry section the crops must be watered, or *irrigated*. This is usually done by damming some stream and leading the water to the fields through canals and ditches.

A large part of the world's supply of copper, gold, silver, and lead comes from this section. Mining is by far the most important industry.

Most of the metal-bearing rock is found in the mountains. It occurs in comparatively thin layers extending down into the earth. Deep mines are sunk into these layers by blasting, and the rock is hoisted to the surface. It then goes to the reduction works,

INTERIOR OF A GOLD MINE, COLORADO.



MELTING GOLD AT THE ASSAY OFFICE, HELENA, MONT.

where it is crushed and washed, or smelted, or roasted, or treated with chemicals in order to obtain the metal. The same rock often contains more than one kind of metal.

Butte and Helena, in Montana, and Bisbee, in Arizona, are the greatest copper-mining centers; the most noted silver mines are at Leadville and the most noted gold mines at Cripple Creek, in Colorado; and Idaho and Utah produce the most lead. Each of these metals, however, is mined in every state of the section. Coal is mined in Colorado and Wyoming, and some iron ore and petroleum are obtained in Colorado.

Herding also is an important industry. There are great herds of cattle and sheep in every state of the section.

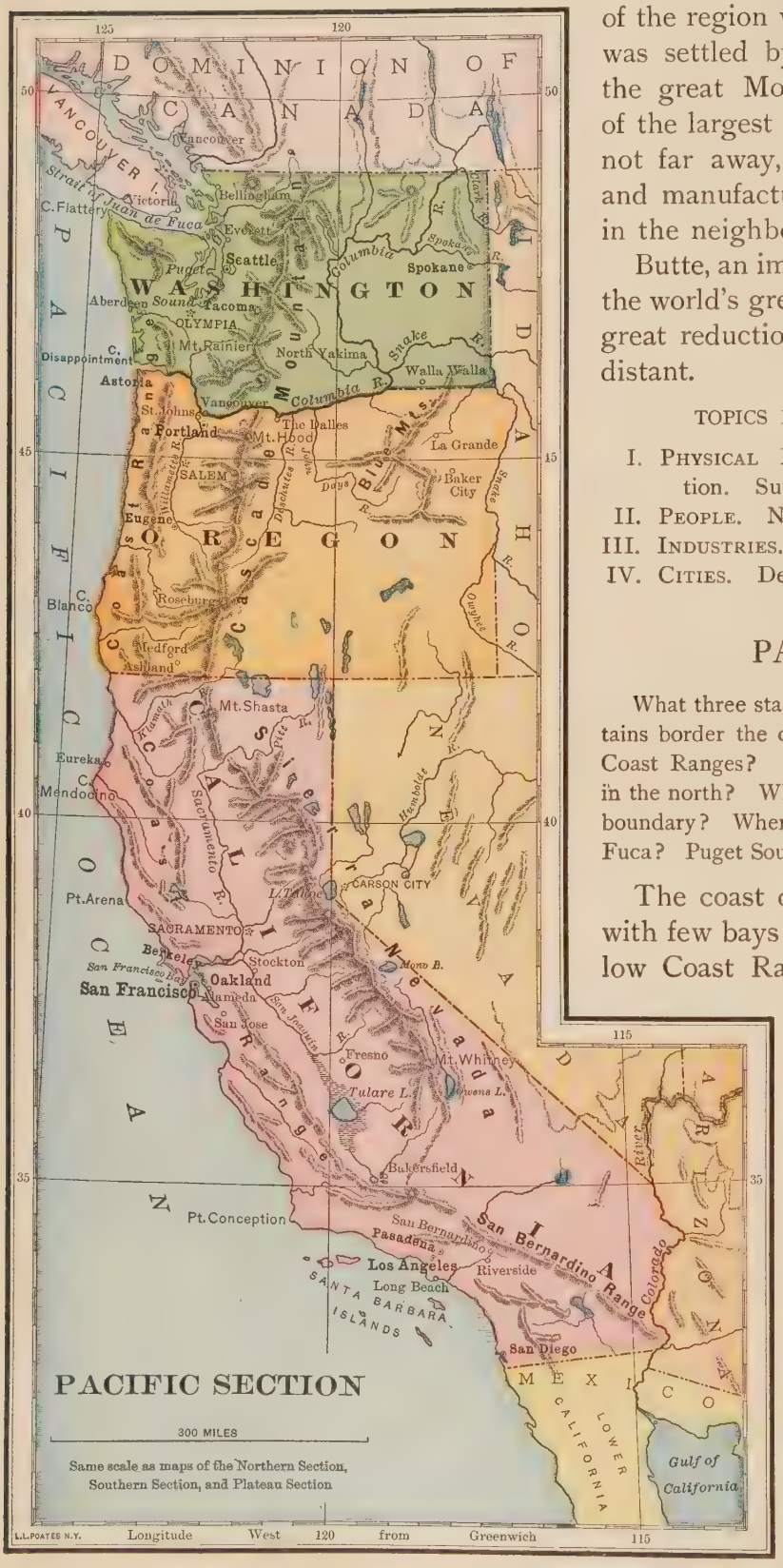
The greatest ranges for the cattle are east of the Rocky Mountains, on the Great Plains of Colorado, Montana, Wyoming, and New Mexico. Very little of the land is fenced, and the great herds roam from one part of the range to another. The grass dries into a kind of hay in the summer, but remains standing and forms good food through the winter. Twice a year the mounted "cowboys" collect the cattle in a "round-up"; the young cattle are branded with the owner's mark, and those of proper age are sent east to be fattened and converted into beef.

Sheep are most plentiful in Montana and Wyoming, but are also very numerous in New Mexico and Utah. Each herd is attended by "sheep men," with their shepherd dogs to keep the sheep together and protect them from coyotes, or prairie wolves. In summer the herds find fresh pasturage in the mountains, but in the winter they are driven out on the plateau, where there is less snow. The sheep men live in covered wagons furnished with stoves and sleeping bunks, where they can keep comfortable even in the winter; but they lead very lonely lives. Once and sometimes twice a year the sheep are sheared, and the great bags of wool are sent east to market. Thousands of sheep also are sent east to be fattened, killed, and converted into mutton. Cheyenne in Wyoming, and Great Falls and Billings in Montana, are great shipping points for wool and cattle.

Of the few cities in the section, Denver, the capital of Colorado, is by far the largest. It lies on the Great Plains, at the foot of the Rocky Mountains, but its elevation is just a mile above the ocean. It is the great commercial center of the section, and has large works for smelting ores. Not far away are Colorado Springs, a noted health resort, and Pueblo, an important manufacturing center, with smelters and iron and steel foundries.

Salt Lake City is the second city of the section. It is the commercial center for much

SHEEP HERDERS AND THEIR WAGON.



of the region west of the Rocky Mountains. It was settled by Mormons, a religious sect, and the great Mormon temple in this city is one of the largest buildings in the section. Ogden, not far away, is an important railroad center, and manufactures beet sugar from beets raised in the neighborhood.

Butte, an important city of the section, is one of the world's greatest copper-mining centers. The great reduction works are at Anaconda, not far distant.

TOPICS FOR ORAL OR WRITTEN WORK

I. PHYSICAL FEATURES. Location of the Plateau Section. Surface. Climate.
II. PEOPLE. Number. Races.
III. INDUSTRIES. Mining. Herding. Farming.
IV. CITIES. Denver. Salt Lake City. Butte.

PACIFIC SECTION

What three states are in the Pacific Section? What mountains border the coast? What great ranges are east of the Coast Ranges? What great river breaks through the ranges in the north? What great river forms part of the southeast boundary? Where is San Francisco Bay? Strait of Juan de Fuca? Puget Sound? What is the capital of each state?

The coast of this section is steep and rocky, with few bays or harbors. It is bordered by the low Coast Ranges. Farther east are the high and more rugged Sierra Nevada and Cascade Mountains. Their tops, in the north, are always covered with snow, and they contain much grand scenery. East of these high mountains the section lies chiefly in the dry plateau region, but west of them there are abundant winter rains. These are brought by ocean winds, which also prevent the winters from becoming very cold. The summers are dry and warm, particularly in the south.

More people live in this section than in the Plateau Section.

WHEAT HARVESTER AND THRASHER, WASHINGTON.

but it is very thinly settled in comparison with the eastern part of our country. Most of the people are whites from the Eastern states, but there are a few Indians, and more Chinese than in all the rest of the Union.

The great valleys between the high mountains and the Coast Ranges are noted farming regions. In the south, where there is less rainfall, water from the snow-fed mountain streams is led to the orchards and vineyards in irrigating ditches.

PICKING HOPS, WASHINGTON.

What two rivers drain the great valley in California? What one drains the valley in Oregon? Puget Sound lies in the valley in Washington.

The chief crops in this section are wheat and fruit. Hay, barley, and hops are produced in the great valleys, and sugar beets in the valleys of the Coast Range south of San Francisco Bay.

Wheat is raised in the great valleys in all the states, and also in eastern Washington in the Columbia valley.

Most of the fruit is grown in California, which is the greatest fruit-growing state in the Union. Among the fruits grown are grapes, peaches, pears, plums, and oranges. Much of this fruit is sent "fresh" in refrigerator cars to the Eastern markets, and much of it is canned or preserved. Most of the grapes are used to make wine or raisins.

Barley is a grain much like wheat; and hops are the flowers of the hop vine. Both barley and hops are used mainly in making beer. From the juice of the beets white sugar is made.

Many cattle and sheep are raised in this section, and much fine wool is produced. The fisheries are very valuable. Every year salmon ascend the Columbia and other northern rivers to lay their eggs, and great numbers are caught in nets and weirs. When cooked and canned, they are sent to almost every city in the world to be eaten. Oysters, cod, and halibut are caught along the coast.

The heaviest forests of the country are in the northern part of this section. The trees are mostly soft-wood: fir in Washington and Oregon, and redwood in northwestern California. Lumbering is an important industry in these regions. Small groves of "Big Trees," a kind of redwood, are found on the west slope of the Sierra Nevada.

DRYING RAISINS, CALIFORNIA.

These trees are taller than a high church spire, and are among the largest in the world.

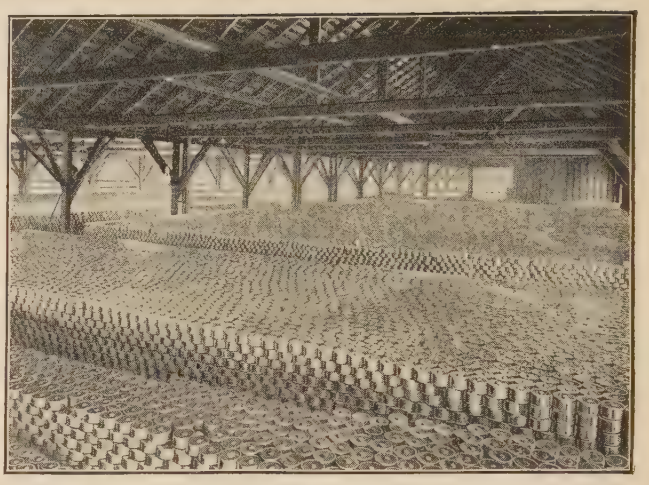
Sixty years ago very few white men lived in this section; but when gold was discovered in California, gold hunters hurried there from all parts of the world, so that San Francisco became a large city in a few months. The section is rich now because of its farms rather than because of its mines; but about one fourth of the gold mined in the United States still comes from this section, mostly from the northern half of California.

Lumbering, Washington.

About one fourth of the petroleum collected in our country comes from the oil wells in southern California. It is used largely for fuel, although coal, mined in northern Washington and on Vancouver Island, is used also.

Manufacturing has not yet become a leading industry; yet the lumber mills about Puget Sound are the largest in the world; there are great salmon canneries along the Columbia; the making of wine, the preserving of fruit, and flour milling are extensive industries in California; and the making of sugar from home-grown beets is a growing industry.

What great city is on San Francisco Bay? San Francisco is one of the large cities of our country, and the largest city and greatest seaport on the Pacific coast of America. The



Cans of Salmon Ready for Shipment.

harbor in the bay is one of the finest in the world. Its entrance is called the Golden Gate. Lines of steamships connect the city with South America, with New York, with Australia, and with Asia. Among the important manufactures of the city is the refining of the cane sugar grown on the Pacific islands. Many people doing business in San Francisco live in Oakland, on the east side of the bay.

Find Los Angeles. It is the chief market of the fruit and wine region of southern California. Where is Portland? Ocean steamships ascend the Columbia and Willamette rivers to its docks. Where is Seattle? It is the chief port on Puget Sound. Railways connect all of these cities with the East.

Turn to the map on p. 66. In what part of North America is Alaska? By what waters is it nearly surrounded? What strait separates it from Asia? By what great river is it crossed?

Alaska belongs to the United States. It is a great peninsula, and is twice as large as Texas.

Northern Alaska is very bleak and cold. The mountainous southern part is warmed by ocean winds; yet it is cold and moist enough for much snow to fall. Many of the high mountain valleys are nearly filled with snow. It becomes so deep that its lower part

is pressed into solid ice, which creeps slowly down the valley as a *glacier*, or river of ice. When glaciers descend into the sea, huge pieces break off and float away as *icebergs*.

Where is Mount McKinley? It is the highest peak in North America.

Very few people live in Alaska. Eskimos, a people thought by some to belong to the yellow race, are found in the north; but the natives of the southwest coast are Indians. Most of the few white men who live in Alaska are gold miners on the western and southern coasts and in the Yukon valley.

Where are the Pribilof Islands? Every summer, seals come from the Pacific Ocean to these islands. Many of them are killed here. The fur of these animals, gold, copper, and codfish and salmon caught in great numbers along the coast are the chief products of Alaska.

TOPICS FOR ORAL OR WRITTEN WORK

I. Pacific Section. States. Surface. Climate. People. Chief crops. Fisheries. Forests. Mining. Manufactures. Cities.

II. Alaska. Location. Size. Climate. Glaciers. People. Products.

MINOR COUNTRIES OF NORTH AMERICA

CANADA AND NEWFOUNDLAND

Look at the map on p. 29. In what part of Canada do most of the people live? Notice what circle crosses the northern part. In what zone is the northern part of Canada? (map, p. 18.)

The northern part of Canada is too cold for the growth of trees which men could use to make houses, or of vegetables and other plants which they could use for food. The ground is covered with snow for the greater part of the year, and snowstorms sometimes occur in summer. In the central part of Canada there are extensive forests, and the winters are not quite so long and cold as they are farther north.

Except in a few mining settlements and trading posts, the only people living in these lonely and desolate regions are a few scattered families of Eskimos and Indians, who spend their time in hunting and fishing. They often find it difficult to keep from starving and freezing to death during the long winters.

A Group of Eskimos.

In winter the Eskimos live near the coast, where they can catch seals, walruses, and other sea animals. They live in low, dome-shaped huts built of stones and mud, or of blocks of ice and snow. Men, women, and children dress much alike, in clothing made out of heavy fur. During the short summer they move inland to hunt the reindeer, or caribou, which wander far north in great herds. The Eskimo eats the flesh of the reindeer, and makes his clothes, his summer tent, and his canoe of reindeer skin or seal skin.

The Indians live farther south than the Eskimos, in the region where there are forests. They make huts

of poles, over which they stretch the skins of animals and about which they pile brush and snow. They get their food by fishing and hunting, and trap the mink, marten, beaver, otter, and other small animals for their fur-covered skins. White men have trading houses in this region, where the Indians trade the furs for guns, blankets, and clothing.

There are few wagon roads in this wild country, but there are many rivers and lakes. In summer, Eskimos, Indians, and the white traders travel on these waters in canoes, which they carry from one lake or river to another. In winter, when the country is covered with snow and ice, all loads are carried on sledges drawn by dogs, while the men run alongside.

DOG TEAMS AND SLEDS, CANADA.

The men wear long snowshoes to prevent them from sinking into the deep snow.

In these ways the furs reach the settled region farther south, or the shores of Hudson Bay. Then they are sent to England to be made into muffs, capes, and other garments. These furs, and gold from the Klondike region in the extreme northwest, are about the only things of value sent from the cold, bleak, and lonely northern part of Canada.

In southern and southeastern Canada, where most of the people live, the winters are cold, but the summers are long and warm enough for grain, grass, and vegetables to ripen. Agriculture is the chief industry in this region.

Near the Pacific the climate is moist and mild, but the surface is mountainous, and little farming is done. There are extensive forests, and lumbering, coal mining, gold mining, and fishing are leading industries. Vancouver is the important city and seaport in this region.

Where are Lake Winnipeg and the Saskatchewan River? Much wheat for export is grown in the basin of this lake and river. What city is south of Lake Winnipeg? It is a market for farmers and fur traders.

Where are the St. Lawrence and Ottawa rivers? Find Lake Ontario and Lake Erie (map, p. 37). Grain, vegetables, apples, and hay are grown near these lakes, and in the St. Lawrence valley. Many dairy cattle are raised, and cheese and butter are made for export.

North of the farming region are extensive forests, and lumbering and sawmilling are important industries. Find Ottawa and Quebec on the map. Both these cities are great lumber centers.

What peninsula is in the southeastern part of Canada? Here are valuable coal and iron mines, with extensive forests farther north. Find Halifax. It is the chief harbor and seaport of this part of Canada.

What large island is east of the Gulf of St. Lawrence? The shallow parts of the ocean just south of this island are called "the Banks of Newfoundland." They are the greatest fisheries in the world. Immense numbers of cod and other kinds of fish are caught there by fishermen from Newfoundland and southeastern Canada.

WASHING CODFISH, NEWFOUNDLAND.

Long ago the valley of the St. Lawrence belonged to the French, but just before our Revolutionary War it was taken by the English. Some of the people now are descendants of the early French settlers, and speak the French language.

Canada still belongs to England, but is permitted to govern itself almost entirely. The chief officer, however, is appointed by the English king, who also appoints the chief officer of Newfoundland.

Where is Montreal? It is the largest city and the greatest railroad center of Canada. Ocean steamships ascend the St. Lawrence to its wharves, and a long railroad extends west through Winnipeg to Vancouver on the Pacific coast. Toronto is the second city of Canada in size. Ottawa is the capital.

Sketch North America and mark off Canada.

TOPICS ON CANADA

I. Location and Climate.
II. Industries. Farming regions. Lumber regions. Mining regions. Hunting regions. Fishing region.
III. People. English. French. Eskimos. Indians.
IV. Government.
V. Cities.

MEXICO AND CENTRAL AMERICA

Name the country that is just south of the United States. What waters are east of Mexico? west and southwest? What peninsula forms the western part of Mexico? the southeastern part? What river is between the United States and Mexico? What mountains are in Mexico? What part of America is southeast of Mexico?

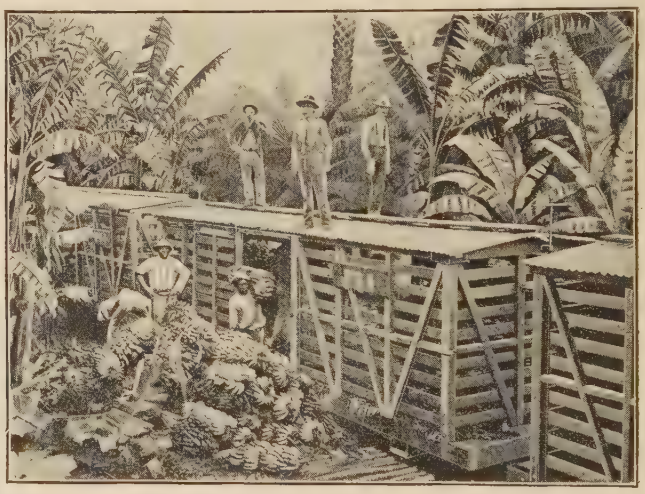
North America narrows rapidly in Mexico, and in Central America it narrows to the Isthmus of Panama in the south.

The coasts of Mexico and Central America are narrow lowlands, but a little way from the shore the surface slopes steeply upward to a high plateau, or *table-land*. In Mexico this is part of the Rocky Mountain highland (map. p. 20). In what zones are these countries? The lowlands are hot, moist, and unhealthful. The highlands are not so hot, and in Mexico they are very dry.

A Volcano in Mexico.

Along the foot and side of the table-land is a region of tangled forest where monkeys and humming birds are found. In the forests are mahogany trees, vines bearing vanilla beans, and the sarsaparilla plant.

The table-land is bordered with mountain ranges, so high that many of the peaks are always snow-covered. At times some of them pour out clouds of steam and streams of white-hot melted rock, or *lava*. For months their tops may be hidden in clouds of steam, while at night the gleam of the hot lava is so bright that the mountains seem on fire. Such peaks



Loading Bananas, Central America.

are called *volcanoes;* each is a sort of chimney through which steam and other gases, formed within the earth, may escape.

Farming, cattle raising, and mining are the chief industries. In the warmer lower lands are groves of orange trees and bananas, and of tall, feathery palm trees; and cotton, sugar cane, coffee, and tobacco are grown.

Many of the plants of the table-land are like those which we see at home, for the weather, though usually rather dry, is much like that of

the temperate zone. In the forests are oak and cedar trees, while corn, wheat, and beans grow on the farms. One of the most useful plants is the *maguey*. This is the same as the "century plant" grown in gardens at home. From its sap a popular drink is prepared; its pulpy roots are used for food; and the fiber of one kind of maguey is used in making twine and coarse bagging. This is called *sisal hemp* in the lowlands of Yucatan, where it is extensively grown for export.

Maguey Plants, Mexico.

The chief wealth of Mexico comes from the silver mines. They are in the highlands. The Spaniards who first settled the region soon began to mine gold and silver, and about one third of the silver mined in the world still comes from Mexico. Silver and silver ore are the chief exports, but copper also is mined and exported. Many cattle and sheep are raised on the table-land, and some hides are sent to the United States.

More Indians lived in Mexico and Central America than in the northern part of the grand division, and they were more nearly civilized. Many of the Spanish settlers married Indian women, and their children were half-breeds. Most of the people now are half-breeds and partly civilized Indians. The Spaniards and a few of the half-breeds own most of the land and are rich and powerful, but the Indians and most of the half-breeds are poor, ignorant, and wretched. They are the laborers on the farms and in the mines.

A Group of the Common People in Mexico.

The people who work on the farms live in villages and towns. Their houses are often wretched hovels; a hole through the wall answers for a window, and the hard ground for a floor. The walls are built of straw, or of sun-dried brick called *adobe*, and the roofs are covered with tiles or with coarse grass.

Indian corn and beans are the food of most of the common people. The beans are cooked with red pepper pods. The corn is ground, between two pieces of stone, into a coarse meal. It is then made into a dough, and thin pieces are baked in a very hot clay oven.

Like the English colonists, the descendants of the Spanish settlers freed themselves from the mother country. Mexico is a republic, and Central America contains several small republics.

What is the capital of Mexico? It is the largest city. Railroads extend from it through northern Mexico into the United States, and also to the chief Mexican ports — Vera Cruz and Acapulco.

The United States owns a strip of land, called the Canal Zone, across the Isthmus of Panama. Through this it has dug a canal in which the largest ships may pass across the isthmus between Colon and Panama, and thus avoid the long voyage around South America.

TOPICS ON MEXICO AND CENTRAL AMERICA

I. COUNTRIES. Surface and climate.
II. PRODUCTIONS. Of the mines; plantations; forests; pastures.
III. PEOPLE. Ancestors. Language. Food. Houses.
IV. CITIES AND PANAMA CANAL.

MARKET PLACE IN A PORTO RICO CITY.

WEST INDIES

What group of islands is southeast of North America? Name the four largest islands. What group north of Cuba forms part of the West Indies? What sea is between the West Indies and South America? In what zone are most of the West Indies?

The larger islands of the West Indies are the tops of a high mountain chain whose lower parts are covered by the sea. The Bahama group consists of low, sandy islands.

The islands are so cooled by ocean breezes that they are neither so hot nor so unhealthful as the lowlands of Central America; but at times they are visited by terrible storms of wind, or *hurricanes*, which destroy crops, blow down buildings, and sink ships.

Many of the islands are surrounded by coral *reefs*. These are low rocks made by the coral animals, or *polyps*.

The polyps live in great colonies and are attached to the bottom of the ocean. When they die their stony skeletons are left, on which other polyps grow, like buds, and these on dying leave a foundation for still other buds. In this way the rocky mass gradually grows upward to the surface of the water, where it forms a low island or a ragged reef of coral rock. Such coral reefs and islands are found in the warmer parts of all the oceans where the water is clear and not too deep. Some coral islands form a nearly complete ring, partly inclosing a portion of the sea. Such islands are called *atolls*.

In the shallow waters of the Bahamas, sponges are found. They are jellylike animals which fasten themselves to rocks and feed on what the waters bring them. The sponges which you use are the skeletons of these animals.

The soil of the West Indies is generally very fertile; and on most of the islands there are dense forests containing palm trees, mahogany, and *lignum vitæ*, a very hard wood of which tenpin balls are made. But the West Indies are especially noted for the great crops of sugar cane which are grown, and made into raw sugar. Most of the sugar used in the United States is grown in Cuba. Much of the finest tobacco also comes from the West Indies. Coffee, bananas, and other tropical fruits grow in these islands. From the Bahamas, pineapples and oranges are shipped to our Eastern cities.

Columbus first landed on one of the Bahama Islands; therefore the Spanish claimed the West Indies. They brought so many negroes

LOAD OF SUGAR CANE IN CUBA.

THE PALACE IN HAVANA, CUBA.

from Africa to work on the plantations, that now there are more negroes than white people on the islands. But Spain lost all of the islands. Porto Rico and several smaller islands are owned, and the republic of Cuba is protected, by the United States. Most of the other islands belong to England; but Haiti is occupied by two negro republics.

Where is Havana? It is the capital of Cuba, and the largest city in the West Indies. It is a great sugar and tobacco market.

TOPICS ON THE WEST INDIES

I. ISLANDS. Large. Group of small.
II. CLIMATE AND SOIL.
III. PRODUCTIONS. Sugar. Tobacco.
IV. HISTORY AND GOVERNMENT.
V. HAVANA.

CORRELATIONS AND COMPARISONS

Position and Coast. — In what zones is North America? What ocean borders each side of it? From what grand division does each ocean separate it? What two large bays and one strait are north of it? What two gulfs and one sea are east? What gulf, sea, and strait are west? Which coast is the most irregular? Name four important bays on the east coast; one bay and one sound on the west coast. Name the most important islands.

Surface and Drainage. — Where is the great highland of North America? Name its important mountains. What five great river systems are east of this highland? What three systems are on its west slope? Which river basins contain large lakes? Name nine large lakes. Where are the great lowlands? What mountains are in the eastern part of North America? What river flows into New York Bay? Why is it important? Name three branches of the Mississippi.

Climate. — In what zones is Canada? In which are Mexico and Central America? In what zone is the United States? In what part of North America is the climate most suitable for such food plants as grain and potatoes? In what part do most of the people live? Why is farming not pursued in the far north? Why is it not generally pursued on the western highland? For what industry does the climate adapt this highland? How does the northern part of the grand division differ from the southern part in climate? in products? in number of inhabitants?

Products. — Sketch, or trace from the map, an outline of North America, and write in the proper places the names of the chief farm products: wheat, corn, rice, potatoes and vegetables; apples, oranges, grapes, bananas; coffee; sugar cane, sugar beets; cotton; tobacco.

On another sketch or tracing, locate animal industries: cattle, hogs, sheep, wool; fish, oysters; furs; seals.

On another sketch or tracing, locate the forests and mining regions: coal, iron, copper, petroleum, gas, gold, silver, lead, salt.

Cities. — What industries are carried on in cities? Tell how the location of each of these cities is favorable, and has helped to make it an important city: —

New York	Buffalo	Pittsburgh	Memphis
Philadelphia	Detroit	Kansas City	Birmingham
Boston	Milwaukee	Omaha	San Francisco
Baltimore	Duluth	New Orleans	Portland
Washington	Toronto	Savannah	Seattle
Montreal	St. Louis	Charleston	Los Angeles
Quebec	Minneapolis	Galveston	Denver
Chicago	Louisville	Havana	Salt Lake City
Cleveland	Cincinnati	Atlanta	Dallas

Subdivisions and People. — Write a list of the New England states; Northern states; Southern states; Plateau states; Pacific states. Name the state in which you live, and its capital. What is the form of government of the United States? the form of government and capital of Canada? of Mexico? What people did the white men find in North America? Where do the Indians live now? the Eskimos? What river separates the English- from the Spanish-speaking people of North America?

SOUTH AMERICA

LOCATION, SIZE, AND SHAPE

Here is a map showing the shape, surface, and rivers of South America. Compare it with the similar map of North America. Which of these two grand divisions is the smaller? Which is the more regular in shape? Which has the greater number of islands near its coasts?

What ocean is east of South America? What ocean is west? What sea is north? What land is northwest? What isthmus connects South America with North America?

What circle crosses the northern part of South America? What other circle crosses the grand division? In what zone is the southern part of South America? the northern part? (See map of Hemispheres and Zones.)

SOUTH AMERICA. (Same scale as maps of North America, Eurasia, Africa, and Australia.)

South America is the smaller grand division of the Western or American Continent. It forms a great peninsula southeast of North America, with which it is connected by the Isthmus of Panama. It extends across the equator into the southern hemisphere.

The greater part of South America lies in the torrid or hot zone, where there is no change from a summer season to a winter season during the year. The weather in the lowlands is always warm, and the leaves are always green.

The southern part, however, lies in the south temperate zone, and in that zone the four seasons, spring, summer, autumn, and winter, follow one another as they do in the north temperate zone. But we have learned that when it is summer in the north temperate zone, it is winter in the south temperate zone.

So in the southern part of South America the Fourth of July is a winter day, and Christmas is a summer day.

South America has roughly the shape of a triangle. Which side is longest? Which is shortest? What is the general direction of each of the three sides?

Which has the greater number of gulfs and bays, North America or South America? Where is the Gulf of Guayaquil? Lake Maracaibo is a gulf rather than a lake. The mouths of two rivers flowing to the Atlantic form bays. Name the rivers.

What island is south of South America? What cape is south of this island? What strait is north of it? Find the Falkland Islands. Where is Trinidad Island? It contains a large lake of pitch or asphalt. Much of the asphalt used in making our street pavements comes from this island.

Sketch an outline of South America again and again until you can make a good outline in two minutes.

TOPICS FOR ORAL OR WRITTEN WORK

I. Location of South America. Direction from North America. Waters surrounding. Circles crossing. Zones.
II. Size. Compare with North America.
III. Shape. General. Direction of coast lines. Gulfs.

SURFACE

What great mountain chain borders South America on the west? What small highland is in the northeast? What larger highland is in the east? What is the northern part of the great central lowland called? the central part? the southern part?

The Andes Mountains form a high and almost unbroken wall along the western border of South America from the Caribbean Sea to the Strait of Magellan.

What is the general direction of the Andes highland? Where is it broadest? The broadest part of the Andes highland is called the plateau of Bolivia. Find it on the map. It is nearly twice as high as the much broader plateaus of the Rocky Mountain highland.

In the central part of the Andes highland there are two main ranges of mountains, one on the eastern and the other on the western border of the plateau of Bolivia. In the northern part of the grand division the highland divides into several ranges, while south of the plateau of Bolivia it has only one main range.

Although the Andes highland is not so broad as the Rocky Mountain highland, its ranges are much higher. They are so high that their higher summits are covered with snow all the year, even in the hot zone.

Many peaks of the Andes are volcanoes, built up in part by the lava thrown out from their tops. At times there are severe earthquakes, when the ground in this highland shakes so violently that buildings are thrown down, often killing many people.

A Volcano in the Andes.

The Andes have long been noted for mines of silver, copper, and gold; and their high slopes and plateaus afford pasturage for sheep, cattle, and several kinds of llamas.

LLAMAS.

Llamas are woolly animals a little larger than goats. Some llamas are used to carry packs of merchandise in the Andes, and flocks of a smaller kind are kept for their fine long wool. Like the camel, the llama can live for several days without food or drink.

The condor, one of the largest of birds, is found in the region of the Andes. It stands higher than a table, and the width of its outstretched wings is twice the height of a man. It prefers the flesh of dead animals for food, but when very hungry a condor will sometimes carry away a lamb or even a young calf.

From the Andes highland the country slopes east to the Atlantic Ocean and west to the Pacific. Which is the longer slope?

The plateaus of Brazil and Guiana, in the eastern part of South America, are not very high. They are traversed by low mountain ranges.

The surface of South America between the Andes and the eastern highlands is a great lowland plain, which is lower and flatter than the great central plain of North America.

Model South America, showing the Andes, the plateaus of Brazil and Guiana, and the central plain.

TOPICS FOR ORAL OR WRITTEN WORK

I. ANDES HIGHLAND. Compared with Rocky Mountain highland: in position; in direction. Describe: length; height; peaks. Plateau of Bolivia.
II. OTHER HIGHLANDS. Of Brazil. Of Guiana.
III. LOWLANDS.

RAINFALL AND RIVERS

What great river drains the lowland between the plateau of Brazil and the plateau of Guiana? What river is in the lowland between the Andes and the plateau of Guiana? What two rivers between the Andes and the plateau of Brazil unite to form the Plata River? What river drains the eastern part of the plateau of Brazil?

THE ANDES NEAR THE SOURCE OF THE AMAZON.

The winds in the torrid zone generally blow from the east, and the warm, moist winds from the Atlantic bring heavy rains to the part of South America east of the Andes in that zone. This is one of the rainiest regions of the earth. In it are many large rivers. The Amazon is the largest of these.

The Amazon rises in the Andes only a few miles from the Pacific coast, and flows eastward across South America to the Atlantic Ocean through the middle of the rainy region. With its many large tributaries it forms the largest river system in the world. At its mouth it is so wide that one can not see across it from one bank to the other, and even halfway across the continent it is several miles wide. It is so

deep that large steamers sail up the river to the foot of the Andes. On which side of the river are most of its great branches? Name the longest. Name a northern branch.

The plains of the Amazon are called *silvas*, which means "forests." Dense, dark forests cover the whole country. Once or twice a year the rivers overflow their banks, and hence large parts of the silvas are always swampy. In these parts the tall trees are matted together by hanging vines and air plants, while high ferns and other plants grow in the spaces between the trees. The vegetation is green the year round. Boats on the rivers are the only means of travel.

These forests are full of wild animals. The catlike jaguar is the largest and fiercest. The immense boa constrictor coils around his prey and crushes it. One of these great serpents is shown in the picture. Troops of monkeys live and travel long distances among the tree tops. These forests yield rubber, mahogany, and dyewoods.

North of the Amazon basin is the basin of the Orinoco River. This river, though smaller than the Amazon, is still a great river, deep enough for large vessels for several hundred miles from its mouth. Its broad, flat valley is called the *llanos*, the Spanish word for plains.

Although there is no winter season in the torrid zone, there are in many places a wet and a dry season each year. During the wet season the llanos are covered with grasses and herbage which afford pasturage for millions of cattle and horses. During the dry season the llanos become parched and brown, and the cattle seek the hills.

South of the Amazon basin is the basin of the Plata River. This river, often called Rio de la Plata, is really a great bay longer and wider than Chesapeake Bay. The Parana and the Uruguay rivers flow into the head of this bay, and with the Paraguay River are the chief streams of the Plata basin. This basin is as large as the Mississippi basin.

The plains west of the Plata are called *pampas*, and are covered with long grasses with feathery white plumes. The pampas are among the best pasture lands in the world for sheep, cattle, and horses; and near the Plata River are the chief wheat-growing regions of South America.

The São Francisco River is a highway of trade, and many people live in the lower part of its basin.

IN THE SILVAS.

The moist winds from the Atlantic, after blowing over the Amazon valley, lose the last of their moisture in crossing the cold lofty summits of the Andes. They descend the western slope of those mountains as such dry winds that little rain falls on the Pacific coast of South America in the torrid zone. Much of this coast is a desert, the only vegetation being in the valleys of the snow-fed mountain streams.

Farther south, however, in the south temperate zone, the winds generally blow from the west, as they do in the north temperate zone. Hence in the southern part of South America the west slope of the Andes receives ample rains and is covered with forests, while the region east of the Andes is an arid region like the Great Plains in the United States.

Sketch South America; locate the Orinoco, Amazon, and Plata rivers.

TOPICS FOR ORAL OR WRITTEN WORK

I. CENTRAL PLAIN OF SOUTH AMERICA. Extent. Compare with central plain of North America.
II. LLANOS. River. Seasons. Life.
III. SILVAS. Rivers. Rainfall. Forests. Animals.
IV. PAMPAS. Climate. Life.
V. PACIFIC SLOPE. North. South.

PEOPLE AND COUNTRIES

There are fewer people in South America than in any other grand division except Australia. What parts are nearly uninhabited? The most thickly settled regions are about the mouth of the Plata and northward along the east coast. Much of the interior of South America in the torrid zone is too rainy and too densely covered with forests to be cultivated or thickly peopled. But on the pampas west of the Plata it is cooler, and there is less rain; and this region is rapidly becoming the most thickly settled part of South America.

THE DOTS SHOW WHERE THE MOST PEOPLE LIVE.

When first visited by white men, South America was inhabited only by Indians. Most of the Indians were savages, but those called Incas, in Peru, were partly civilized. They wove coarse cloth, made pottery, and built excellent roads. Where is Peru?

There are still many wild Indians in the interior of South America. Most of them live in the region of the silvas, but some live among the mountains and some in the arid region of the south. Those along the Amazon hunt and fish. They use spears for killing fish and turtles, and blowguns with poisoned arrows for birds and other game. Those in the south live chiefly by hunting a kind of llama which wanders in great herds over the arid plains.

Soon after Columbus visited America, it was learned in Europe that gold and silver were to be found in South America, and a great many people went there to seek these metals. Most of them went from Spain and from Portugal, a country adjoining Spain.

The Spaniards took all the Andes highland portion of South America and much of the Plata basin. Many of the people now living there are the white descendants of these Spanish settlers, but the laboring classes are mostly half-breeds of Spanish and Indian descent.

Name all the countries of South America crossed or bordered by the Andes Mountains. Name the capital of each. Which of these countries are crossed by the equator? Which one has no seacoast? On what ocean or sea does each of the others border? What two small countries are east of Argentina? In Uruguay and Paraguay, as in Argentina and the Andean countries, the Spanish language is spoken.

The Portuguese settled the eastern part of South America, and their descendants, both whites and half-breeds, still live in Brazil, and speak the Portuguese language. Many ne-

INDIAN WOMAN GRINDING CORN.

groes were taken to Brazil from Africa to work on the plantations along the coast, and their descendants, with the half-breeds, still form the laboring classes there.

All the South American countries were at first under the control of European nations, principally Spain and Portugal; but one by one they rebelled against the mother countries, until now Guiana only is held by European powers. All the other countries are republics. The chief hero in the South American revolutions was Simon Bolivar, often called "the Washington of South America."

With both the Spaniards and the Portuguese settlers came many Catholic priests, who established missions and schools among the Indians; and to-day the Roman Catholic is the prevailing form of religion in South America.

TOPICS ON PEOPLE OF SOUTH AMERICA

I. INDIANS. Former condition. Present condition.
II. SPANIARDS. Spanish South America. Countries.
III. PORTUGUESE. Portuguese South America. Country.
IV. NEGROES.
V. LANGUAGES OF SOUTH AMERICA.
VI. FORMS OF GOVERNMENT.

ROMAN CATHOLIC CATHEDRAL, LIMA, PERU.

BRAZIL

Locate Brazil. Describe its surface. In what three great river basins does it lie? In what zones is it? Beginning with Guiana, name the countries that border Brazil.

Brazil is about as large as the United States, and contains about a third of the people in South America.

Brazil supplies to other countries many useful things, such as rubber, hides, tobacco, cotton, cacao, and sugar, but it is especially noted for its coffee. It produces nearly twice as much coffee as all the rest of the world.

The coffee tree bears beautiful purple berries, each of which contains two seeds, which are the coffee of commerce. The ripe berries are gathered two or three times a year and thrown into vats, where the soft

DRYING COFFEE, BRAZIL.

part is washed away from the seeds. The seeds are then dried, packed in sacks, and sent to the market.

The coffee plantations are in the warm plateau region of southern Brazil. Where is Rio de Janeiro? The name means "River of January." It is the capital and largest city of Brazil, and is named after a little river on which it is situated. The river is so called because it was discovered one summer day in January. Much of the coffee is shipped from this port, and there-

fore Brazilian coffee is often called *Rio* coffee.

In the narrow and crooked streets of Rio de Janeiro may be seen many negroes — men, women, and children — carrying burdens of all kinds balanced on their heads. On the outskirts of the town are handsome residences overlooking one of the most beautiful harbors in the world. The bay is nearly surrounded by high hills, where the wealthy citizens live during the warmer and rainier part of the year when yellow fever prevails in the city.

City and Harbor of Rio de Janeiro.

Where is Santos? Much coffee is shipped from this port.

Where is Pernambuco? There are sugar plantations near this city.

Where is Bahia? Sugar and tobacco are shipped here.

Rubber is an important product of Brazil. It is gathered by the Indians of the silvas, in the swampy forest. With his hatchet the Indian cuts a gash in the bark of a rubber tree; then with a piece of clay he fastens a little cup to catch the milky sap that slowly trickles out. When he has gashed about a hundred trees, he collects the sap from the cups. Next he builds a fire of palm nuts, and, pouring some of the

Smoking Rubber.

sap on a pole, rolls it into the thick smoke of the burning nuts until the sap has become hard and elastic. Then he rolls the pole back, pours on more sap, and so on. The hardened sap forms the rubber of commerce.

Where is Para? Nearly all the rubber is sent from Para to the United States and Europe, where it is used for wheel tires, overshoes, and hundreds of other things.

The Brazil-nut tree and the cacao tree grow in the silvas. The fruit of the cacao is a pod from the seeds of which cocoa and chocolate are made. Cassava, or manioc, the root from which tapioca is made, is also a native of Brazil. With the meal made from this root, the natives make cassava bread, which they use largely for food.

Where is Manaos? It is the largest town in the interior of Brazil.

On the sketch map of South America, indicate Brazil, and locate Rio de Janeiro.

Topics on Products of Brazil.

I. Coffee. What coffee is. Location of the coffee plantations. Chief ports for the shipment of coffee.
II. Sugar. The sugar plantations.
III. Rubber. What it is. How it is gathered. For what it is used.
IV. Other Products.

ARGENTINA

In what zone are the pampas? What river system drains this plain? In what direction does the plain slope? What mountains are west of it? What three Spanish-speaking countries are in the Plata basin? Which of these is the largest?

Wharves at Buenos Aires.

Next to Brazil, Argentina is the largest and richest country of South America. Every year many thousand people come from Europe to make their home in its grain-growing lands, and there are more white people there than in any other country of South America.

The herdsmen of the pampas, called *gauchos*, are of mixed Spanish and Indian blood. There are no better horsemen in the world, and none more skillful with the lasso.

A Herd of Cattle in Argentina.

The herds of cattle and sheep form the chief wealth of the country, and great quantities of live cattle, packed meat, beef extract, tallow, hides, and wool are shipped to Europe.

The farms are mainly in the valley of the Parana River, from which the grain can be easily carried to the markets by vessels, but railways have been built to many of the farming districts. There are more miles of railway in Argentina than in any other South American country. One line crosses the continent. Argentina exports nearly half as much wheat and corn as the United States, mostly to England and France.

What is the capital of Argentina? Buenos Aires means "good air," but the city is not very healthful. It is the largest city of South America, and a great commercial center. Channels have been dredged in the shallow harbor, so that steamers can now come up to the wharves. In the crowded streets and showy shops are heard many languages, for one quarter of the people are foreigners.

Sketch a map of South America; show Argentina.

TOPICS ON ARGENTINA

I. Location and Boundaries.
II. Surface and Drainage.
III. Climate and Rainfall.
IV. Vegetation and Animals.
V. Chief City.

CHILE

What country of South America forms a long, narrow strip on the western slope of the Andes? What countries are east of it? What water is west?

Northern Chile is in the rainless region and is therefore a desert. In central Chile are many farms, chiefly in the valleys of the mountain streams where water may be had to irrigate the crops. Southern Chile has ample rainfall, and the mountain slopes are covered with forests.

Grain, fruit, copper, and silver are produced, but the chief wealth of Chile is "nitrate," or saltpeter, from which gunpowder is made, and

which is used in Europe as a fertilizer. It is dug from old lake beds in the desert region of the north. Where is Iquique? Most of the saltpeter is shipped from this port.

Chile is one of the most densely settled and progressive countries of South America. The people are energetic, and have excellent schools and colleges.

Where is Santiago? Earthquakes are frequent there, and most of the houses are low, with very thick walls. There are many beautiful streets and parks, and many large and imposing public buildings. Find Valparaiso. It is the largest seaport on the western coast of South America. A railway connects it with Buenos Aires.

CAPITOL, SANTIAGO, CHILE.

On a sketch map of South America show Chile.

TOPICS ON CHILE

I. LOCATION AND BOUNDARIES.
II. NITRATE. Where found. Where taken. How used.
III. PEOPLE.
IV. CITIES.

CORRELATIONS AND COMPARISONS

Location. — What isthmus connects the two grand divisions of the Western Continent? How do these grand divisions compare in size? How far north does North America extend? How far south does South America extend? Which grand division extends farthest east? farthest west? Where does a tropic cross each? What countries are included between the tropics?

Shape. — What is the general shape of each of the Americas? In what respects are their Pacific coast lines alike? In what respects is the northern coast line of North America like that of South America? In what ways is it different? Where are the ice-bound coasts of the Western Continent? Which of the Americas has the more islands? the more peninsulas? the more good harbors? the longer coast line?

Surface. — How are the Americas alike with respect to highlands and lowlands? Compare the great highlands of the grand divisions in extent; in height; in width; in mountain ranges. Compare the great lowlands in size; location; water partings. Compare the plateaus of Brazil and Guiana with the eastern highlands of North America.

Drainage and Climate. — What three large rivers drain the Atlantic slope of South America? Which one corresponds in position to the Mississippi in North America? In what respects are the basins of these two rivers alike? What grain is the leading product of each? How does the Amazon basin compare with the Mississippi basin in size? in climate? Which basin has the more luxuriant vegetation? Why? Which has the more people? the more cities? Name the longest branch of the Amazon; three streams of the Plata basin.

Compare the Pacific slopes of the Americas in width, and in length of rivers.

Compare the two Americas with regard to the size and number of large lakes.

Forests. — Where are the forest regions of North America? of South America? What is made from the sap of a South American tree? From what seaport is rubber shipped?

Foods. — Where are the grazing regions of the Western Continent? In which grand division are they on a plateau? on a lowland? What are the meat-exporting cities of North America? of South America? Where are the wheat-growing regions of this continent? Where does the coffee tree grow?

Minerals. — What minerals are found in both Americas? Where? What minerals are more abundant in North than in South America? Where is saltpeter produced? For what is it used?

People. — In which of the Americas was the most civilized tribe of Indians? What two languages are mostly spoken in North America? in South America? What form of government prevails in the Americas? What regions of the Western Continent are sparsely inhabited because they are too dry? too cold? too warm?

Countries. — What countries of South America are on the north and east coasts? What ones are on the west coast? Which ones have no coasts? Name the capital of each country. Name the chief seaport on the Pacific. Which country has the most railways? Give some reasons why the Amazon basin has so few railways.

EURASIA

1000 miles

Same scale as the maps of North America, South America, Africa, and Australia

EURASIA

POSITION, SIZE, AND SHAPE

Europe and Asia together, as we have learned, are called Eurasia. What circle crosses the northern part of Eurasia? the southern part? What circle crosses the islands near the southeastern portion? In what zones is Eurasia? What other grand division lies in three zones? If you will trace, on tissue paper, the maps of North America and South America, and then cut them out and lay them over this map of Eurasia, you will get some idea of the size of this large grand division.

What ocean is north of Eurasia? east? south? What waters nearly surround the western part? What grand division is southwest of Eurasia? What two seas lie between Eurasia and Africa? What isthmus connects them? A ship canal, called the Suez Canal, has been dug through this low and sandy isthmus. What strait connects the Mediterranean Sea with the Atlantic Ocean? the Red Sea with the Indian Ocean? What strait separates Eurasia from North America? On which side of Eurasia are islands most numerous?

ON THE SUEZ CANAL.

Like each of the Americas, Eurasia has the shape of a triangle, but the southern and eastern sides are very irregular. The western part of the triangle is a great peninsula called Europe, projecting westward from the main body of the grand division, which is called Asia.

In the Western Continent, as we have learned, there is a long mountain system in the western part, and less elevated highlands in the eastern part. In Eurasia, however, the great highland extends in a broad ∨ shape, and has a general east and west direction.

The western arm of the highland extends from northwest to southeast. The eastern arm extends from northeast to southwest. The region where these two arms meet is the highest part of the great Eurasian highland, and contains the highest mountains in the world. One range that is always snow-capped is called the Himalayas, or the "abode of snow."

The plateaus of the highland region extend nearly to the ocean on the south and east sides of Eurasia, but on the north side a wide lowland plain lies between the highland and the coast. The low mountain range that divides the great northern plain is sometimes called the boundary between Europe and Asia. What is its name?

Some of the largest rivers in the world flow east or south from the eastern arm of the Eurasian highland. Name four rivers on the eastern slope of this arm; three on the southern slope.

A Distant View of the High Himalayas.

More than three fourths of the people in the world live in Eurasia, and about one third of these live in the small European part of the grand division. Where do the Mongolians live? Where do the Malays live? The Mongolian race occupies most of the eastern part of Asia.

The home of the white or Caucasian race is south of the Himalayas, and about the western arm of the Eurasian highland. The Europeans are nearly all civilized white people, and are descended from the same ancestors as the greater part of the people in America. Their occupations, habits, and needs are much like ours, and by far the largest part of our trade is with them.

Southwest of the Ural Mountains find the Caspian Sea and the Black Sea. They are on the boundary between Europe and Asia. Some of the rivers draining the great plain flow southward into these seas, but many flow north and west to the ocean. The largest of these are in the Asiatic part of the grand division, and flow into the Arctic Ocean. They are frozen over for most of the year.

Homes of the Races in Eurasia.

COMPARISONS

Position. — In what hemisphere is Eurasia? In what part of the hemisphere? What four oceans border Eurasia? What ocean separates the eastern part of Eurasia from America? What ocean separates the western part from America? the northern part? How does Eurasia compare with America in size? How does it compare with each grand division of America in general shape?

Relief. — In what direction is Eurasia longest? In what general direction does its great highland region extend? Does the great highland region of North America extend in the direction of the greatest length of the continent? How is it in South America? In what respect, then, are the highlands of the three grand divisions alike? In what respect do the highlands of Eurasia differ from those of America?

In what direction from the highland region is the great plain of Eurasia? Compare this plain with the great plains of America in direction of greatest extent.

Drainage. — Name the large rivers of the great northern plain of Eurasia. Does all of this plain slope northward? Name the rivers of Eurasia which flow to the Pacific or to the Indian Ocean.

EUROPE

EUROPE. (Same scale as the relief map of the United States.)

POSITION AND COAST LINE

What circle crosses northern Europe? What ocean is north? west? What great sea and two smaller seas are south? Which grand division has the most irregular coast line, North America, South America, or Europe?

Europe is the western part of Eurasia. The greater part of Europe lies in the northern half of the north temperate zone, as Canada does. The northern part has much ice and snow and is very cold. The great lowlands in the central part, however, receive mild west winds from the ocean which give them a much warmer climate than that of Canada. The southern coasts are sheltered from cold north winds by mountains, and are warm enough for oranges and other heat-loving plants to grow, although these coasts are as far north as Ohio and Pennsylvania.

The coast line is more irregular than that of any other grand division, and forms many peninsulas, with gulfs, bays, or seas between them.

What sea opens into the Arctic Ocean? What large peninsula is in northwestern

Europe? What sea and two gulfs are east of the Scandinavian peninsula? What small peninsula is at the entrance to the Baltic Sea? What sea is west of the Danish peninsula? The North Sea is one of the greatest fishing places in the world. Millions of herring and other fish are caught there every year.

What island group is west of the North Sea? These islands are famous as the home of the English, Scottish, and Irish peoples. What bay is west of Europe? Many sardines and oysters are taken in the Bay of Biscay. What peninsula is between the Bay of Biscay and the Mediterranean Sea? This peninsula is the home of the Spanish and Portuguese peoples.

What strait connects the Mediterranean Sea with the Atlantic Ocean? Name an island group and five islands in the Mediterranean. Which of these is nearest the mainland? What two peninsulas project into the central part of that sea? What sea is east of the Italian peninsula? What sea is east of the Grecian peninsula? There are many small islands in the Ægean Sea. A group of small islands is often called an *archipelago*.

Ships can sail through the outlet of the Black Sea into the Ægean and Mediterranean seas, and thence into the Atlantic Ocean; but the Caspian Sea is a great salt lake, with no outlet or water connection with the ocean.

Practice making a sketch map of Europe like this, but larger.

Scottish Peasant's Home.

TOPICS ON POSITION AND COAST LINE OF EUROPE

I. Location. In what zones. How bounded.

II. Coast Line. Peninsulas. Indentations. Islands.

SURFACE AND RIVERS

Is the northern or the southern part of Europe the more mountainous? Where are the Caucasus Mountains? the Alps? the Pyrenees? Name four other ranges in southern Europe. What part of Europe is an extensive lowland plain?

Part of the great Eurasian highland extends across southern Europe and makes that portion of the grand division very mountainous. The highest ranges are the Caucasus in the southeast, the Alps in the south, and the Pyrenees in the southwest. Snow always lies on the peaks of these mountains, and there are large glaciers in the high valleys of the Alps and the Caucasus.

The Alpine highland is carried far to the eastward by the Carpathian, Pindus, and Balkan mountains, and it extends through the southern peninsulas in the Apennines and the Pindus mountains. All these ranges are much lower than the Alps, and are covered with forests. From the Pyrenees a dry plateau extends over the greater part of the Spanish peninsula and is crossed by several mountain ranges.

The flat-topped Kiolen Mountains are not very high, but are so far north that they are covered with snow. Many glaciers descend from them into the narrow bays, or *fiords*, which indent the Atlantic coast of the Scandinavian peninsula.

A Glacier in the Alps

The Ural Mountains are a low, gentle swell of land on the eastern boundary of Europe.

Central Europe is a vast, flat, lowland plain. The plain is narrow in the west, but in the east it extends from the Black and Caspian seas to the Arctic Ocean.

Europe is much smaller than North America or South America, and it has no river so large as the Mississippi or the Amazon. Most of its rivers, however, are important routes for trade, and many of them have been connected by canals.

Beginning in the Ural Mountains trace a line to the Strait of Gibraltar between the sources of rivers flowing to the southern seas, and of those flowing to the waters north or west of Europe. This line is the divide between the southern and the northern slope of Europe. Which slope has the longest rivers?

Which river of the north slope flows into the Arctic Ocean? Which into the White Sea? Name two large lakes in this slope. Name two rivers flowing into the Baltic. Which two rivers flow into the North Sea? The Rhine is the most famous river of Europe. Name a river flowing into the Bay of Biscay.

The largest river of Europe is in the southern slope, and flows through a great delta into the Caspian Sea. What is its name? The Volga is a very important route of commerce. The great plain near its source is low and flat, and the head waters of the Volga have been connected by canals with streams flowing to the northwest; thus goods from the Volga basin are shipped up the river to the Gulf of Finland and the Baltic ports. What other river flows into the Caspian Sea?

What three rivers flow into the Black Sea? The Danube is connected by a canal with the Rhine. What two rivers flow from the Alps — one into the Adriatic and the other into the Mediterranean? What river of the Spanish peninsula flows eastward?

Besides lakes Ladoga and Onega there are many smaller lakes in the cold, flat lowland of northern Europe. In the Alpine region, also, there are many small but beautiful lakes. They are fed by streams flowing from the melting ends of Alpine glaciers, and are visited every year by thousands of tourists.

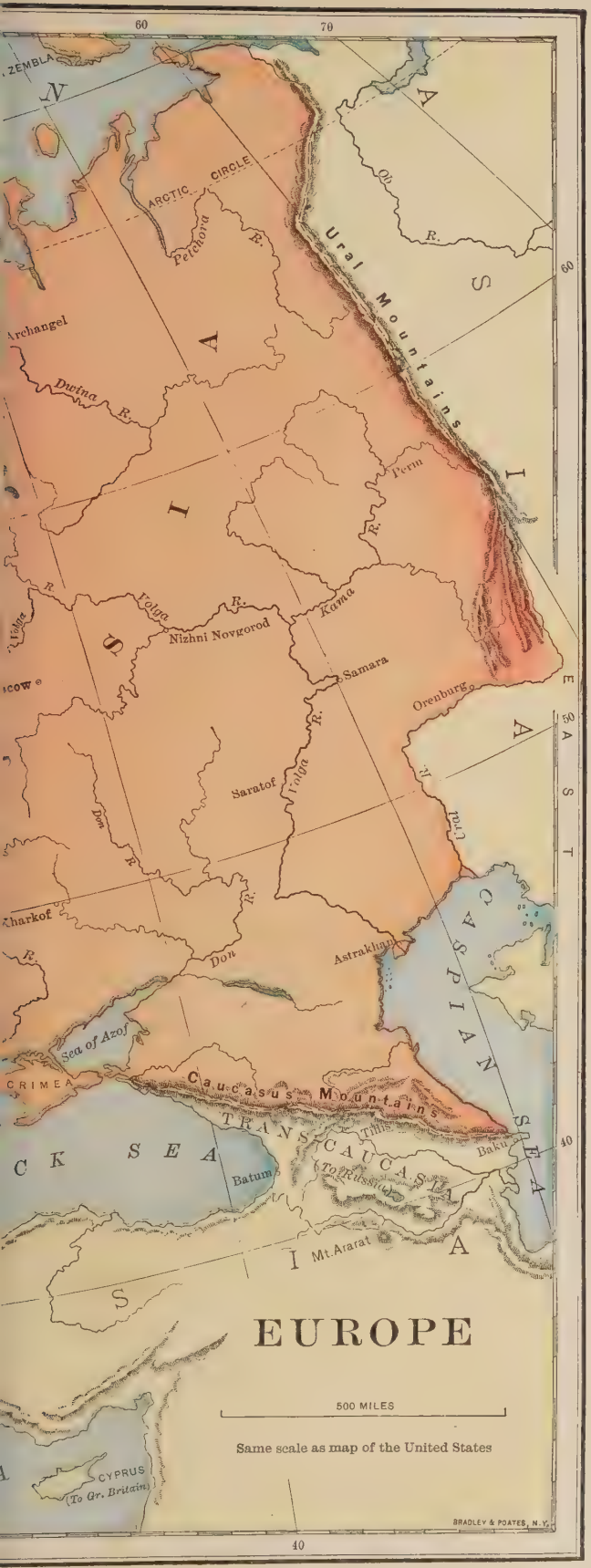
A Lake in the Alps.

Make a sketch map of Europe, showing its large rivers.

TOPICS ON SURFACE AND RIVERS OF EUROPE

I. Highlands. Location. Alpine system. Pyrenees and Spanish plateau. Caucasus. Ural. Kiolen.
II. Lowlands. Location. Extent.
III. Great Divide. Location. Direction.
IV. Rivers of the Northern Slope.
V. Rivers of the Southern Slope. Caspian basin. Black Sea basin. Mediterranean basin.
VI. Lakes. Northern. Alpine.

30 Longitude 20 West from 10 Greenwich 0 10 NORTH 20 30 40
ARCTIC OCEAN
ATLANTIC OCEAN
NORTH SEA
BALTIC SEA
MEDITERRANEAN SEA
ICELAND
To Denmark
Reikiavik
Mt. Hekla
ARCTIC CIRCLE
FAROE IS.
To Denmark
SHETLAND IS.
ORKNEY IS.
HEBRIDES OR WESTERN IS.
BRITISH ISLES
IRELAND
Dublin
Belfast
IRISH SEA
Glasgow
Edinburgh
Manchester
Sheffield
Liverpool
Birmingham
LONDON
Thames R.
ENGLAND
ENGLISH CHANNEL
Str. of Dover
Amsterdam
THE HAGUE
Antwerp
NETHERLANDS
BELGIUM
Cologne
Rhine R.
Hamburg
Elbe R.
BERLIN
GERMANY
Leipzig
Breslau
Warsaw
Vistula R.
Prague
Munich
Danube R.
AUSTRIA-HUNGARY
VIENNA
Budapest
Carpathian Mts.
Dniester R.
Kief
Dnieper R.
Havre
Seine R.
PARIS
Loire R.
FRANCE
Bay of Biscay
Finisterre
Bordeaux
Garonne R.
Bilbao
Zurich
Geneva
SWITZERLAND
Lyons
Rhone R.
Milan
Venice
Trieste
Drave R.
Theiss R.
Cantabrian Mts.
Pyrenees Mts.
Cevennes Mts.
Oporto
Douro R.
PORTUGAL
SPAIN
LISBON
Tagus R.
MADRID
Guadiana R.
Valencia
Guadalquivir R.
C. St. Vincent
Strait of Gibraltar
Malaga
Barcelona
Marseilles
CORSICA
SARDINIA
BALEARIC IS.
Apennines
Genoa
Po R.
ADRIATIC SEA
ROME
Naples
Mt. Vesuvius
Palermo
Mt. Etna
Str. of Messina
SICILY
MALTA
To Gr. Britain
ALGERIA
AFRICA
Belgrade
Danube R.
Save R.
SERVIA
MONTENEGRO
CETINJE
DURAZZO
ROUMANIA
BUCHAREST
Balkan Mts.
SOFIA
BULGARIA
Philippopolis
Adrianople
Pindus Mts.
ALBANIA
Saloniki
TURKEY
CONSTANTINOPLE
Bosporus
Sea of Marmora
ATHENS
CRETE
Aegean Sea
Ionian Sea
Black Sea
Caspian Sea
Gulf of Bothnia
Gulf of Finland
Lake Ladoga
PETROGRAD
Valdai
Riga
Dvina R.
STOCKHOLM
Gothenburg
Skagerrack
Cattegat
DENMARK
COPENHAGEN
CHRISTIANIA
Bergen
SCANDINAVIAN PENINSULA
Lofoden Is.
Hammerfest
North Cape
LAPLAND
Torneo R.
60
50
40
WEST
0
Longitude East SOUTH 20 from Greenwich



THE DOTS SHOW WHERE THE MOST PEOPLE LIVE.

PEOPLE

What part of Europe is most thickly settled? (See map above.) What parts have the fewest people?

Europe is but little larger than the United States. It is one of the smallest of the grand divisions, but it is so thickly settled that no grand division except Asia contains more people. You may think that some parts of the United States are densely peopled, but west central Europe is much more crowded. Europe has about five times as many inhabitants as the United States. Even in the less thickly settled parts there are more people than in the whole of North America.

The most highly civilized people in Europe live in the thickly settled parts. They have railways, electric lights, and telegraph lines as we have, and they receive news from all parts of the world by means of telegraph cables which have been laid on the bottom of the ocean from Europe to each of the other grand divisions.

White men have been living in America for about four hundred years. That seems a long time. Yet white people have been living in Europe not only for hundreds, but for thousands, of years.

The white people who settled our country had already become civilized when they came from Europe and conquered the savage Indians whom they found here. But thousands of years ago the white people of Europe

were themselves as savage and uncivilized as the Indians in America.

The first part of Europe to become civilized was the Grecian peninsula. The Greeks were conquered by the Romans of the Italian peninsula. The Romans learned much from the conquered Greeks, and became the most famous and powerful people of Europe. They conquered all the savage peoples of western Europe and taught them how to become civilized. Where is France? Spain? England? The Romans conquered these countries and made laws for the people.

Where is the German Empire? The savage peoples who lived in that region finally conquered the Romans, and learned civilization from them.

Where is Denmark? Norway? Sweden? The early people of these regions were called Northmen. They were bold seamen who sailed along the coasts of western Europe, robbing and often killing the people in the more civilized lands. But they gradually learned peaceful ways from the peoples whom they robbed.

Where is Russia? This was one of the last countries of Europe to become civilized. Most of the people of Russia are white, but there are also many people of the yellow race.

Where is Turkey? The Turks belong to the yellow race. Turkey is hardly counted among the civilized nations of Europe even to-day.

A person who can speak English and Spanish can make himself understood in nearly every country of America. In Europe, however, the people of almost every country speak a language of their own, which the people of the neighboring countries do not understand. Thus, the English language is spoken in the British Isles; the German language in the German Empire; the Dutch in the Netherlands; the French in France; the Spanish in Spain; the Portuguese in the Republic of Portugal; the Swedish in Sweden; and so on. So that one who wished to talk with the people in all parts of Europe would have to speak many languages. Though the languages of the various countries differ so greatly, some of them are more nearly alike than others.

Draw a line from Belgium to southeastern Italy. The countries southwest of this line were long controlled by the Romans, and their languages are not only somewhat like one another, but are somewhat like the old Latin language that was spoken by the Romans. For this reason the southwestern part of Europe is often called Latin Europe.

THE PUBLIC SQUARE OF ROME, NINETEEN HUNDRED YEARS AGO.

Draw another line from southeastern Italy to northern Norway. The languages of the countries between this line and southwestern Europe are more nearly like the old German language than the old Latin language, and so this middle part of Europe is often called Germanic Europe. This is true also of the English language, so the British Isles are classed with the countries of Germanic Europe.

VICTORIA EMBANKMENT, LONDON.

What great country is in eastern Europe? Find Bulgaria; Serbia; Montenegro; Albania. The languages of these five countries are called Slavonic languages; they resemble one another, but are very different from the languages of western Europe.

Thus we see that most of Europe may be divided by the languages of the people into three great parts: 1. Middle or Germanic Europe; 2. Southwestern or Latin Europe; and 3. Eastern or Slavonic Europe. The people in each of these parts are somewhat alike not only in their language, but also in their manners and customs, in their religion, and often in even their general appearance. Thus, while most of the people of Europe are Christians, the people of southwestern Europe are mainly Roman Catholics, those of middle Europe are largely Protestants, and those of eastern Europe belong mostly to what is called the Greek Church. The Turks, however, are not Christians, but Mohammedans.

Make a sketch map of Europe. Show where it is most thickly settled, and mark off and name its three divisions.

TOPICS ON PEOPLE OF EUROPE

I. DENSITY OF POPULATION. Most dense part. Least dense. Comparison with the United States.

II. SPREAD OF CIVILIZATION. Greeks and Romans. People north of the Alps. Russians and Turks.

III. LANGUAGES. Europe and America. Three divisions of Europe.

THE BRITISH ISLES

Where are the British Isles? The largest island is called Great Britain. What is the name of the other large island? What strait and channel separate these islands from France? On clear days the white chalk cliffs of Great Britain may be seen across this strait from the shores of France.

It takes a fast steamship about six days to cross the ocean from New York to the port of Liverpool on the west coast of Great Britain. From there it takes a few hours to go on a fast railway train to London. London is the largest city in the world. It contains about as many people as the cities of New York and Philadelphia combined.

The country between Liverpool and London is wonderfully green and beautiful, for the air of the British Isles is very moist and mild.

LONDON BRIDGE.

Fogs are common in London, and these, with the coal smoke of the great city, begrime the buildings and often make the streets so dark that gaslights are necessary in the daytime. The streets are crowded with all kinds of wagons and carriages. There are few street car lines, but underground railways carry people about the city. The river Thames flows through the city and forms a harbor for ships from all parts of the world. London Bridge is the most famous of the many bridges which cross the river.

HOUSES OF PARLIAMENT, WHERE THE LAWS ARE MADE, LONDON.

The island of Great Britain is divided into England, Scotland, and Wales. Each was once a separate nation. Ireland also was an independent state. Now they form the United Kingdom of Great Britain and Ireland, of which London is the capital.

Canada, Australia, and parts of Asia and Africa are owned by this small but powerful kingdom. The United Kingdom and all its colonies form the British Empire.

Partly because of its many rich foreign possessions, and partly because of its large manufactories, the United Kingdom is the wealthiest nation of Europe and the greatest commercial country of the world.

As in our country, the people choose men to make the laws; and the king or ruler, like our president, appoints men to see that these laws are obeyed. But the king is not elected every few years as our president is. He holds his office as long as he lives, and when he dies, his eldest son, or some other near relative, becomes the ruler. A government in which the ruler holds the position because of his birth is called a *monarchy*.

Many years ago the English people learned to make good cloth, which they sold all over Europe. After a while coal and iron were found in Great Britain, and factories were built for making iron and steel goods. Great Britain is now the greatest cloth-making country in the world, and one of the greatest metal-working countries.

WINDSOR CASTLE, HOME OF THE KING.

In northern and western England the factories are so close together that the region seems an endless manufacturing city, in which is made almost everything that can be made of iron or steel, cotton or wool.

There are so many people in England, and they do so much manufacturing, that the British Isles do not produce enough food for the people or enough raw materials for the manufactures. Thousands of steamships and sailing vessels carry the manufactured goods to other countries, and bring back raw material and food. Much raw cotton goes to England from the United States to be manufactured, and much meat, wheat, and flour for food.

London, on the Thames, and Liverpool, on the river Mersey, are the principal seaports and commercial cities. Where is Manchester? It is the great center for cotton manufacturing. A canal from the sea en-

CHURCH STREET, LIVERPOOL.

ables ships to reach the city. Where is Birmingham? Iron and steel goods are made there.

Southern Scotland is a manufacturing region, but the northern part is a wild, hilly country, called the Highlands. The many beautiful lakes among the hills are much visited. On the hills many sheep and cattle graze, watched by faithful shepherd dogs. Edinburgh is the old capital of Scotland. Where is Glasgow? This city on the river Clyde is famous for the steel steamships made there.

IRISH PEASANT AND SPINNING WHEEL.

Ireland is called the Emerald Isle because of the rich verdure produced by its moist climate. The island supplies England with great quantities of vegetables, butter, and eggs. The Irish also raise flax, from the fiber of which they weave fine linen cloth. Dublin and Belfast are the largest cities in Ireland.

Many English and Scotch and Irish people have come to the United States to live.

Sketch Europe, showing the British Isles.

A LAKE IN SCOTLAND.

TOPICS ON THE BRITISH ISLES

I. LOCATION. ISLANDS AND DIVISIONS.
II. SURFACE AND CLIMATE.
III. PEOPLE AND GOVERNMENT.
IV. INDUSTRIES.
V. CITIES. London. Others.

THE GERMAN EMPIRE

What waters are north of the German Empire? What countries are east? south? west? In what direction does most of its surface slope? What river in the south flows to the Black Sea? Into what seas do all the other streams flow? What river is in the western part?

The northern part of the German Empire lies in the great central lowland of Europe. The southern part is in the Alpine plateau. The Germans have the finest army in Europe, but they are just as much noted for their learning. Their schools and universities, their art galleries and their libraries, are among the best in the world. Many Americans go to Germany to attend the universities and to study music, for much of the best music has been composed by Germans.

The country once consisted of a number of small monarchies, but these are now united to form one strong nation. Each little country takes care of its own affairs, as our states do, but the king of Prussia, the largest of the German states, is the head of the united German nation. The people choose the lawmakers. Such a union of countries in one great monarchy may be called an *empire*, and the ruler, an *emperor*.

The Germans are a thrifty people. Every bit of land that can be made to yield crops is carefully planted, and even the steep hillsides along the rivers are dug away so as to form steps or terraces, which are set out with trees and vines. Women and girls do much of the

outdoor work, for the boys must go to school, and most of the young men must be soldiers for two years or more.

Grapes and vegetables are grown in the hilly lands; rye for bread, and beets for sugar, in the level lands. More than half of the sugar used in the world is beet sugar. Beets are grown for this purpose in all the countries of the European plain, but particularly in Germany. The sliced beet is put into hot water to extract the sweet juice. This is then boiled until it becomes a thick sirup, from which the sugar separates in the form of crystals. The portion of the beet which is left is used as food for cattle.

The Germans manufacture many other things besides beet sugar. They are first among European peoples in the amount of iron and steel made, and the fastest vessels that cross the ocean are German steamships. Germany is next to Great Britain in the quantity of coal mined. Woolen, cotton, and linen cloth are manufactured. In some of the villages of Germany nearly every house is a little factory, in which the people weave cloth, or carpets, or beautiful lace for which the Germans are famous.

Find Berlin. Next to London and Paris it is the largest city in Europe. It is the capital of the empire. Where is Hamburg? It is one of the greatest seaports on the mainland of Europe. On what river is Cologne? It is the center of a great manufacturing region and is the city where *cologne water* was first made.

Many German immigrants come to our country every year.

STREET IN BERLIN.

Sketch Europe; show the German Empire.

TOPICS ON THE GERMAN EMPIRE

I. LOCATION.
II. SURFACE AND DRAINAGE.
III. INDUSTRIES AND PRODUCTIONS.
IV. PEOPLE AND GOVERNMENT.
V. CITIES.

THE NETHERLANDS

What countries border the Netherlands? On the coast of what sea is this country? What river flows across it?

Almost the whole of the Netherlands lies in the low and fertile delta of the Rhine. Netherlands and Holland, another name for this country, both mean "lowland." The sea once covered a large part of the country, but the people built walls of earth, or *dikes*, from the shore, inclosing shallow parts of the sea. When a dike was finished, the water was pumped out of the basin inclosed, and in a short time the land thus gained from

GERMAN VILLAGE STREET.

the sea was ready to be plowed and sown with grain. Much of the surface of the Netherlands, in the west and southwest, is thus inclosed and is below sea level. The water which collects on this land is pumped out by windmills. Above the flat, green country the great sails of these windmills flutter like the wings of gigantic birds.

Windmills and Canal, Holland.

Canals cross almost every part of the country. Some of the larger canals are for boats and barges; some are to drain the land, and others take the place of fences. In winter, when these canals are frozen, men, women, and children go about on skates, and much of the trade is carried on over the ice.

The people of the Netherlands are called Dutch, and are related to the Germans. They are noted for their industry, and there are no better farmers in all Europe. They raise grain and potatoes, but not enough grain is produced to feed the dense population. The moist lowlands make excellent pasture, and the Dutch are famous for their butter and cheese. Dairy products and cattle are exported.

Some of the large islands southeast of Asia, some of the West Indies, and a part of Guiana in South America belong to the Dutch. Drugs, coffee, and spices are sent from these colonies to the mother country, and from there to all parts of Europe and America.

Find Amsterdam. It is the largest city of the Netherlands, and a busy seaport. It is surrounded by strong dikes. Some of the streets contain canals, so that one may look out of the window and see white sails in the streets. Many diamonds are sent to this city from Africa to be cut and polished. By law Amsterdam is the capital of the Netherlands, but the queen resides, and the laws are made, at the Hague.

New York city was first settled by the Dutch.

Make a sketch map of Europe, showing the German Empire and the Netherlands.

TOPICS ON THE NETHERLANDS

I. Location.
II. Dikes and Canals. Their uses.
III. Industries and Productions.
IV. People.
V. Government and Colonies.

AUSTRIA–HUNGARY AND SWITZERLAND

What country is northwest of Austria-Hungary? northeast? What countries are southeast? west? What water is south? What part of Austria-Hungary lies in the Alpine region? This part is called the Tyrol. What mountains are in the eastern part? In what river basin is most of Austria-Hungary?

Austria-Hungary, like Great Britain and Germany, is one of the great powers or nations of Europe. It is composed of two countries, Austria and Hungary, united under one emperor. In Austria German is the prevailing

Public Square of Vienna, Austria.

language, though some Slavonic languages also are heard. Hungary is the country of the Magyars, a people of the yellow race, and also of some peoples from eastern Europe speaking different languages.

The great treeless plains of Hungary, drained by the Danube, are noted for their fine crops of wheat and corn.

There are many factories of linen cloth in Austria-Hungary, and the Bohemian glass made there is famous. The hardy mountaineers of the Tyrol are herdsmen in summer, and famous wood carvers when the mountain pastures are covered with snow.

Vineyard in the Tyrol.

Name the capital of Austria-Hungary. It is one of the largest and most beautiful cities of Europe. It contains one of the largest libraries in Europe. Vienna is a noted center of manufacturing, of learning, and of art.

Budapest, on both sides of the Danube, is in the midst of the Hungarian wheat fields, and is a great flour-milling center.

What is the name of the little country between the Tyrol and France? What countries border Switzerland on the north and on the south? What can you say of the surface of Switzerland?

Switzerland is one of the smallest and most mountainous countries of Europe. It is so high that about one third of its surface is always covered with snow.

The slopes of the Alps furnish much rich pasture, and Swiss cheese is famous the world over. Where the hills are too steep for carts, the peasant women in their big wooden shoes may be seen bearing great bundles of hay on their heads down to the valleys far below. Many of the picturesque little cottages and barns look as though they might slip down the steep mountain slopes upon which they are built.

In the towns of Switzerland, watches, music boxes, cloth, laces, and wooden toys are made. Many of these goods are exported to America. Until recently the high ridges of the Alps prevented the Swiss from trading with Italy, but the two longest tunnels in the world have been made through the Alps, and railways now connect the two countries.

German is spoken in the north of Switzerland, French in the west, and Italian in the south. The Swiss are as brave as they are clever, and for many years have held their little country as an independent republic.

Geneva is a famous city, on a beautiful lake of the same name. Zurich is the largest city of Switzerland. Bern is the capital.

People from all over the world visit Switzerland to see its glaciers and grand mountain scenery.

Make a sketch map of Europe, showing Austria-Hungary and Switzerland.

Swiss Cottages on a Mountain Slope.

TOPICS ON AUSTRIA-HUNGARY AND SWITZERLAND

I. Location. Austria-Hungary. Switzerland.
II. Surface. Alps. Carpathians. Danube basin.
III. Comparison. People. Industries. Governments.
IV. Cities. Vienna. Budapest. Geneva.
V. Scenery. Mountains. Glaciers. Lakes.

FRANCE AND BELGIUM

What country is south of England? What separates it from England? What countries are east of France? What country is southwest? What bay is west?

France is the third country in Europe in wealth and power, and is by far the most important of the Latin countries.

Most of the surface is a lowland, through which the Seine, Loire, and Garonne rivers flow northwest from the central and southern highlands. These rivers are navigable, and canals connect them with the Rhone, the chief river of the south. Canals lead also to the Rhine. The cheap water routes to the north, west, and south coasts, and the network of railroads which covers the country, have helped to make France a great commercial nation.

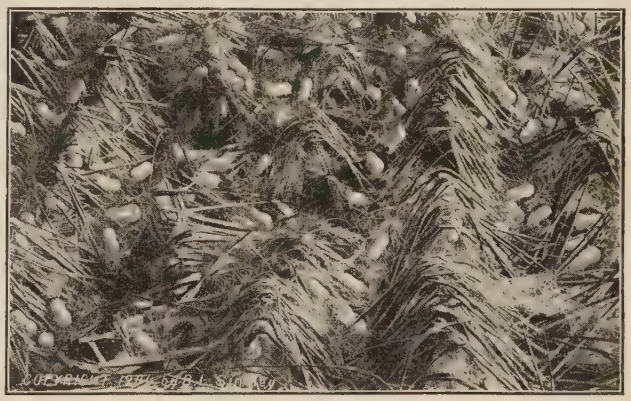
The soil is fertile and is carefully cultivated. The large crops of grain and vegetables from the north and west nearly supply the needs of France for these foods. From the sugar beets grown in the north much sugar is made.

Vineyards cover the warmer slopes of the valleys in central and southern France, and yield the chief crop of the country. France produces more grapes, and makes more wine than any other country in the world. Orchards of olive trees are common in the south, and from their fruit is pressed the best of olive oil.

Gathering Grapes, France.

Herds of cattle, sheep, and goats in many parts of the country supply meat, wool, and the finest cheese; and from the waters of the north and west coasts many cod, herring, sardines, and oysters are obtained.

In southern France mulberry trees are cultivated, and one of the chief industries depends on them. Silk is a fiber, like the strand of a spider web, that the silkworm spins. The silkworm is a kind of caterpillar which feeds on the leaves of the mulberry tree. When the worm is full grown, it spins a cover about itself, winding the fine strand of silk round and round its body until it is wholly covered in a case called the *cocoon*.



Silkworm Cocoons.

The cocoons are softened in hot water, and the silk fibers are wound off upon spools. The fibers are spun into silk thread, which is woven into cloth. More silk cloth and velvet are made in France than in any other country in Europe.

There are coal and iron mines in the eastern half of France, and many cotton, woolen, and linen mills and other factories in which machinery, pottery, laces, kid gloves, and many other articles are made.

Where is Paris? It is the great railroad center of France and, next to London, is the largest city in Europe. Its streets are decorated with marble arches, columns, and statues, and planted with rows of trees. On summer evenings one may see people sitting at little tables along the sidewalk, before the cafés, taking refreshment and chatting gayly. In the galleries of Paris are many of the finest pictures and statues in the world. Students from every land go to Paris to study painting, music, medicine, and science. Beautiful pottery is made near this city. Havre at the mouth of the Seine is its seaport.

Bridges over the Seine, Paris.

Where is Lyons? Much silk and velvet are woven there. Find Bordeaux. It is in the midst of vineyards, and wine is its chief export. Name a great southern seaport.

For a long time France was a monarchy, but it is now a republic.

The island of Corsica in the Mediterranean and the greater part of northern Africa belong to France, as do also parts of southeastern Asia and northern South America, and several islands of the West Indies.

In former times some of the best people of France came to North America to live. Many of them settled in South Carolina, and in New Orleans and Mobile, where their descendants are among our most prosperous citizens.

Dog Cart, Belgium.

What small country is between France and the Netherlands? What water is west of Belgium? What country is east?

The small kingdom of Belgium is one of the most thickly peopled states in the world. In speech and manners about half the people are French, and the other half resemble the Dutch.

Because of the careful cultivation of the land, Belgium has been called the "Garden of Europe"; but it is chiefly noted for its coal and iron mines and for the extent and variety of its manufactures. These include all kinds of machinery and metal articles, glass, cloth, lace, and many other things.

What is the capital? It is noted for the carpets and lace made there. Antwerp is a large and busy seaport.

Make a sketch map of Europe, showing France and Belgium.

TOPICS ON FRANCE AND BELGIUM

I. Location and Boundaries. France. Belgium.
II. Surface and Drainage.
III. Climate and Productions. In the northern part. In the southern part.
IV. Silk Industry. Mulberry tree. Silkworm. Manufacture.
V. Government.
VI. Cities. Paris. Lyons. Bordeaux. Brussels.

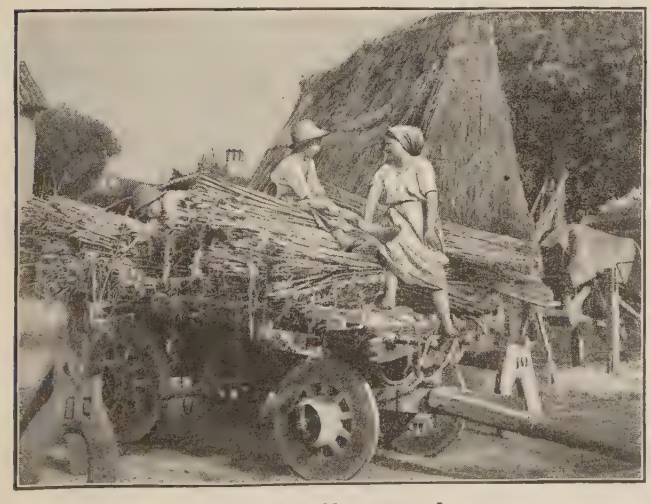
FISHING BOATS, NORTHERN ITALY.

ITALY AND GREECE

What long peninsula is between the Mediterranean and Adriatic seas? What two islands are west of Italy? What island is southwest? What high mountains are on the northern border of Italy? What mountain range extends through the peninsula? Where is the river Po?

The kingdom of Italy includes the Italian peninsula and the islands of Sicily and Sardinia. It is one of the six great powers of Europe. It is a great wine- and silk-producing country: more silkworms are reared and more cocoons and raw silk are produced in Italy than in any other country of Europe. Many cattle, sheep, and goats are raised, and some meat and hides are exported.

The broad, fertile valley of the Po is the greatest farming region, but farming is pursued farther south, also, where irrigation is necessary. Wheat, corn, rice, flax, and grapes are the chief crops, but thousands of mulberry and chestnut trees are cultivated, and in the south are many orchards of olives, oranges, and lemons.



FARM YARD IN NORTHERN ITALY.

The cultivated chestnuts are three or four times as large as the wild ones in the United States, and are much used for food in southern Europe. Another favorite food in Italy is macaroni, made from wheat flour.

ST. PETER'S, ROME.

The Italian peninsula is famous for its greatness two thousand years ago, when it was the home of the Romans. It was then the most civilized country in the world, and the center of the Roman Empire, which included all the countries bordering on the Mediterranean Sea.

As time passed, the empire was broken up. Many of the old buildings in its cities were wholly or partly pulled down and the stones used for buildings that are still standing. The Italian peninsula was divided among several nations; and the Italian language gradually developed. These nations united in recent times to form the present kingdom of Italy.

Find Rome. It is the residence of the king of Italy, and of the Pope, who is the head of the Catholic Church. The Pope's palace, called the Vatican, is near St. Peter's, the largest church in the world. Among the famous

RUINS OF POMPEII, AND VESUVIUS BEYOND.

ruins in Rome are those of the Coliseum, which was used by the ancient Romans as a sort of circus. It could hold as many people as would make a good-sized city.

Where is Naples? It is the largest city of Italy. Much macaroni is exported from this city. Near by are the ruins of Pompeii, a city buried nearly two thousand years ago by ashes falling from the neighboring volcano, Vesuvius. After hundreds of years the ruins were accidentally found, and much of the old city has been uncovered.

Find Milan. It is the chief market in the plain of the Po.

Where is Venice? In the days of Columbus it was the greatest commercial city in Europe. It is built on some low islands several miles from the shore. Canals take the place of the main streets, and the people go about in boats instead of in wagons or street cars. The paved streets are very narrow, some of them not more than three feet wide. The city is noted for beautiful glassware, jewelry, and lace.

A CANAL AND BRIDGE IN VENICE.

The Italian immigrants in the United States are among our most thrifty and industrious laborers.

What small country occupies the peninsula southeast of Italy? What mountains are partly contained in Greece? What water is east of Greece? Most of the islands in the Ægean Sea belong to this state.

The kingdom of Greece, though larger than Belgium, the Netherlands, or Switzerland, is not so important to-day as any one of those countries.

It is famous, however, because it was the first country of Europe to become civilized. Our own civilization came to America from Europe, and may thus be said to have started in Greece. The stories of Ulysses, the Argonauts, Theseus, and many others which are read in school, were all told by the Greeks long before Rome became an empire.

The Greeks to-day speak a language much like that of ancient Greece, and they are still among the foremost traders and sailors of southern Europe.

RUINS OF AN ANCIENT TEMPLE IN GREECE.

The country is mountainous, and the very crooked coast line is fringed with mountainous islands, several of which are volcanic.

Some wheat and barley are cultivated in the valleys, and small quantities of olive oil and figs are exported; but the most important export is the small dried grapes which in commerce are known as *currants.*

Athens, the capital, is noted for the ruins of its beautiful ancient buildings; but most of the beautiful statues which ornamented these buildings have been removed to the museums of London, Rome, or Paris.

Make a sketch map of Europe, locating Italy and Greece.

TOPICS ON ITALY AND GREECE

I. Location and Government. Italy. Greece.
II. Industries and Products.
III. Former Greatness.
IV. Cities. Rome. Athens. Others.

RUSSIA

What is the most eastern country of Europe? Compare it with the other countries in size. What land is east of Russia? What waters are north? What waters and countries are west? south? What sea or lake is southeast? Is the surface mostly flat or mountainous? In what parts are there mountains? In what two directions does the surface slope? Trace on the map the main divide of Russia.

Russia is the European part of the great Russian possessions, which extend eastward over northern Asia and southward beyond the Caucasus Mountains.

Military Road through the Caucasus Mountains.

In what zone is the greater part of Russia? In what zone is the northern part? Nearly

Lapps' Reindeer Teams, Northern Russia.

all of Russia is farther north than the Great Lakes of America. Even in the south the rivers are frozen over for several months in winter.

During the short, warm summers of northern Russia only the surface of the ground thaws, and as the water can not sink into the frozen earth beneath, the whole region becomes a swamp, called a *tundra.* Coarse moss covers this region. Farther south a great forest region occupies nearly one third of Russia. In the southwest are open plains, on which great quantities of grain are grown. This is therefore the most thickly peopled part of the country. In the southeast, however, but little rain falls, and the plains, called *steppes*, are too dry for farming.

Most of the people in Russia belong to the white race. But some belong to the yellow race, as the Finns, who live north of the Gulf of Finland and are dairymen and lumbermen; the Lapps and Samoyedes in the far north, who are hunters and fishers; and the Calmucks and Cossacks in the far south, who raise great herds of sheep, cattle, and horses.

Farming is the chief occupation of the people. The Russian farmers rarely live on their farms, but usually are grouped into villages, or *mirs.* The mir will own or rent all

Russian Carriage Team.

the surrounding farm lands and from time to time divide them equally among the villagers.

Grain and flax are the chief crops. More rye is grown than in any other country, and rye bread is the common food in Russia. Much more wheat is raised than is needed at home, so Russia, like the United States, sells much of this valuable food to the thickly settled countries of western Europe.

A great deal of flax is sold to Great Britain, to be made into linen cloth. But in southern Russia the flax is grown for its seed, from which linseed oil is made.

There are fewer mills and factories in Russia than in western Europe. Cotton and woolen cloths are made in some of the large cities, but most of the cloth used by Russian peasants is woven by their families during the long winters.

Petroleum is an important product of Russia. Find Baku. Although south of the Caucasus Mountains, it is in Russia. Near this town are the largest petroleum wells in the world. More petroleum is produced in this region than anywhere else except in the United States. Part of it is shipped by the Caspian Sea and Volga River to the interior of Russia, and part of it is exported from Batum, on the Black Sea.

Through what waters must a vessel pass in sailing from Odessa, on the Black Sea, to Petrograd? from Petrograd to Archangel, on the north coast? It is a long journey by sea from one coast of Russia to the others, and the rivers of the country are great trade routes. They are connected by canals across the main divide, so that goods are carried by river and canal from the Black Sea or the Caspian to the Gulf of Finland or the Arctic Ocean.

There is much trade in Russia by means of fairs, to which merchants come from other parts of Europe and from Asia. Find Nizhni Novgorod. A fair is held there during three months every summer, where many thousand people buy their stocks of goods.

The *czar* or emperor of Russia was deposed, in 1917, by revolutionists who favor a republican form of government.

Red Square, Moscow.

Name the capital. It is one of the largest cities of Europe. Where are Moscow and Warsaw? They are railway centers. Odessa is a great grain market and shipping point.

Make a sketch map of Europe, showing Russia.

TOPICS ON RUSSIA

I. Location and Size.
II. Plain. Extent. Surrounding mountains. Bordering seas. Regions: tundra, forest, prairie, steppe.
III. Occupations. Farming. Grazing. Manufactures. Mining.
IV. Trade. Routes. Fairs.
V. People and Government.

CORRELATIONS AND COMPARISONS

Extent and Coast. — In what zones is Europe? What large country in America lies in the same parts of these zones as Europe? How does Europe compare with Canada in climate? Which is the larger, Europe or North America? About how much larger? (See tables near end of book.) What is the general shape of North America? of South America? of Europe? In what general direction does the greatest length of each of these land masses extend?

Compare the coast lines of North America, South America, and Europe. Which is the most irregular? Make a list of eleven seas, gulfs, and bays on the coast of Europe. Tell what country or countries of Europe border each of these. Are islands most numerous near the coast of North America, South America, or Europe? Make a list of six islands or island groups near the coast of Europe. Which is the most important? What strait and channel separate the British Isles from the mainland? What narrow waterway connects the Mediterranean Sea and the Atlantic Ocean?

Surface and Drainage. — In what general direction does the continental divide of North America extend? the continental divide of South America? the main divide of Europe? Does the continental divide of the Americas lie in the highlands or in the lowlands? How is it with the main divide of Europe? In what part of Europe are the great highlands? the great lowlands? Where are the great highlands and lowlands in the Americas located? In what part of Europe and in or between what countries are the Alps? the Caucasus Mountains? the Pyrenees? the Apennines? the Carpathian Mountains? the Ural Mountains?

What two rivers of Europe flow to the Caspian Sea? Name the three largest flowing to the Black Sea; one which flows east to the Adriatic; one which flows south to the Mediterranean. Name the two largest rivers of France flowing northwest. Name two rivers flowing to the North Sea; two flowing through Russia to the Baltic. What is the longest river of Europe? How does it compare in length with the Mississippi? What and where is the largest lake in Europe?

Products. — Sketch or trace a map of Europe, and write in the proper places the names of important products: grain, sugar beets, grapes, olives, flax; sheep and cattle, fish, raw silk; coal, iron, petroleum; manufactures. Make a list of articles manufactured in Europe. Name a raw material that is shipped from our Southern states to Europe. For what is it used?

People and Countries. — What people used to live in America before there were any white men here? Do you see more Indians or more white people here now? From what grand division did the white men come to America? Give some reasons why Europe should be specially interesting to the white people who live in America now. How does Europe compare in size with the United States? How does it compare with the United States in population? (See tables near end of book.) Which, then, has the denser population, Europe or the United States? How many states are there in the United States? How many countries are there in Europe? What language is generally spoken in all the states of the United States? How do the countries of Europe differ from our states in the matter of language? in the matter of government? What is the difference between a monarchy and a republic?

What powerful kingdom occupies the British Isles? Name four divisions of this island kingdom. What country on the mainland extends from the English Channel to the Mediterranean Sea? What two countries lie southwest of France? What two small countries are northeast of France on the North Sea coast? What country is east of the Netherlands, Belgium, and France? What small mountainous country is east of France and southwest of the German Empire? What small country is north of the German Empire between the North Sea and the Baltic? What two countries north of Denmark occupy a peninsula? What large country is south of the German Empire? What country south of Switzerland and Austria-Hungary occupies a peninsula? What country bordering the German Empire and Austria-Hungary occupies the eastern half of Europe? What three countries southwest of Russia border on the Black Sea? What two small countries border on the Adriatic Sea? What country lies west of Bulgaria? What country south of Serbia occupies a peninsula?

Make a list of these twenty-one countries of Europe and opposite the names of ten of them write some fact concerning the people, industries, or products of each country. What three countries are republics? Which part of Europe was the first to become civilized? What people spread civilization over much of Europe? What peoples brought civilization to America? What language is spoken in Brazil? in the rest of South America and in Mexico?

Cities. — Name the three largest cities of Europe in the order of their size. Give the location and some fact concerning each of the following cities: —

London	Marseilles	Brussels	Petrograd
Liverpool	Rome	Berlin	Moscow
Glasgow	Naples	Hamburg	Warsaw
Dublin	Venice	Vienna	Odessa
Paris	Amsterdam	Budapest	Athens

EURASIA
1000 MILES
Same scale as the maps of North America, South America, Africa, and Australia
EUROPE
ASIA
AFRICA
ATLANTIC OCEAN
ARCTIC OCEAN
PACIFIC OCEAN
INDIAN OCEAN
NORTH SEA
MEDITERRANEAN SEA
BLACK SEA
CASPIAN SEA
ARABIAN SEA
BAY OF BENGAL
RED SEA
SEA OF JAPAN
SEA OF OKHOTSK
BERING SEA
YELLOW SEA
EAST CHINA SEA
SOUTH CHINA SEA
PHILIPPINE ISLANDS
EAST INDIES
BRITISH ISLES
FRANCE
SPAIN
PORTUGAL
GERMAN EMPIRE
AUSTRIA-HUNGARY
ITALY
SWEDEN
NORWAY
RUSSIA
TURKISH EMPIRE
PERSIA
ARABIA
PENINSULA OF ARABIA
AFGHANISTAN
BALUCHISTAN
HINDUSTAN
PLATEAU OF TIBET
REPUBLIC OF CHINA
MANCHURIA
MONGOLIA
JAPAN
EMPIRE OF JAPAN
INDO-CHINA
SIAM
PLATEAU AND PENINSULA OF DEKKAN
HINDUSTAN PLAINS OF INDIA
RUSSIAN TURKESTAN
CHINESE TURKESTAN
GOBI DESERT
PLATEAU OF IRAN
ARABIAN PENINSULA
LONDON
PARIS
BERLIN
VIENNA
ROME
MADRID
CONSTANTINOPLE
ST. PETERSBURG
MOSCOW
TOKYO
PEKING
CALCUTTA
BOMBAY
MADRAS
CEYLON
COLOMBO
MANILA
SINGAPORE
BANGKOK
SAIGON
HANOI
TEHERAN
KABUL
TASHKEND
SAMARKAND
BOKHARA
MASKAT
ADEN
JERUSALEM
DAMASCUS
BAGDAD
CAIRO
MECCA
CANTON
HONGKONG
SHANGHAI
YOKOHAMA
VLADIVOSTOK
SEOUL
TIENTSIN
FOOCHOW
HUE
RANGOON
MANDALAY
TOBOLSK
EKATERINBURG
TOMSK
IRKUTSK
YAKUTSK
OMSK
ASTRAKHAN
ODESSA
SMYRNA
ALEXANDRIA
TRIPOLI
ALGIERS
TUNIS
FEZ
TANGIER
GIBRALTAR
NOVA ZEMBLA
C. Chelyuskin
FRANZ-JOSEF LAND
NICHOLAS II LAND
NEW SIBERIA IS.
SPITZBERGEN
BEAR I.
ICELAND
CHRISTIANA
STOCKHOLM
HELSINGFORS
BALTIC SEA
WHITE SEA
ARCTIC CIRCLE
TROPIC OF CANCER
EQUATOR
Bering Strait
Lena R.
Yenisei R.
Ob R.
Volga R.
Ural R.
Amur R.
Yangtze R.
Yellow R.
Indus R.
Euphrates R.
Tigris R.
Nile R.
Irtish R.
Syr R.
Amu R.
Hoang Ho R.
Mekong R.
Irrawaddy R.
Ganges R.
Brahmapootra R.
Caucasus Mts.
Ural Mts.
Altai Mts.
Himalaya Mts.
Hindu Kush Mts.
Thian Shan Mts.
Khingan Mts.
Lake Aral
Lake Balkash
Lake Baikal
Caspian Sea
Persian Gulf
Gulf of Siam
Gulf of Aden
Bab el Mandeb
Strait of Malacca
Sea of Marmora
Dardanelles
Suez Canal
Formosa
Riu Kiu Is.
Kuril Is.
Sakhalin
Java
Sumatra
Borneo
Celebes
Moluccas
Timor
Hainan
Yezo
Nova Zembla
Spitzbergen
Franz-Josef Land
Nicholas II Land
New Siberia Is.
Wrangell I.
Iceland
Corsica
Sardinia
Crete
Cyprus
Malta
Balearic Is.
Canary Is.
Azores
Madeira
Cape Verde Is.
Ascension
St. Helena
Tristan da Cunha
Falkland Is.
Kerguelen I.
Amsterdam I.
St. Paul I.
Mauritius
Reunion
Seychelles
Maldive Is.
Laccadive Is.
Andaman Is.
Nicobar Is.
Aleutian Is.
Hawaiian Is.
Fiji Is.
Samoa
Tonga Is.
Society Is.
Marquesas Is.
Low Archipelago
Caroline Is.
Ladrone Is.
Pelew Is.
Marshall Is.
Gilbert Is.
Ellice Is.
New Hebrides
New Caledonia
Loyalty Is.
Solomon Is.
Bismarck Archipelago
Admiralty Is.
Louisiade Archipelago
Torres Strait
Great Barrier Reef
Coral Sea
Tasman Sea
Great Australian Bight
Gulf of Carpentaria
Gulf of Carpentaria
Arafura Sea
Timor Sea
Banda Sea
Celebes Sea
Java Sea
Flores Sea
Molucca Sea
Sulu Sea
Philippine Sea
Yellow Sea
East China Sea
Sea of Japan
Sea of Okhotsk
Bering Sea
Kamchatka
Kuril Is.
Sakhalin
Japanese Islands
Empire of Japan
Republic of China
Manchuria
Mongolia
Indo-China
Siam
Malay Peninsula
Plateau of Tibet
Plateau of Iran
Arabian Peninsula
Plateau and Peninsula of Dekkan
Hindustan Plains of India
Russian Turkestan
Chinese Turkestan
Gobi Desert
Plateau of Arabia
Plateau of Iran
Plateau of Tibet

ASIA

POSITION AND COAST

Name the mountains, river, and seas which separate Asia from Europe. (See political map of Europe.) In what zones is Asia? In what zone is the greater part? What ocean is north of Asia? What ocean is east? What strait separates Asia from North America? What ocean is south of Asia? What two seas are west of southwestern Asia? What isthmus connects Asia with Africa? Name the strait through which the Red Sea opens.

Asia includes more than three fourths of the grand division of Eurasia. It is larger than North and South America combined, and contains about one third of the land surface of the world.

The eastern and southern coast lines are very irregular. What great bay and sea are south of Asia? What gulf extends northwest from the Arabian Sea? Name six seas that wash the eastern shores of Asia. How are most of them partly separated from the Pacific Ocean? Name two peninsulas of eastern Asia. Name three peninsulas of southern Asia.

On which side of Asia are there many islands? What island is crossed by the Tropic of Cancer? What group of large islands is northeast of Formosa? What group of islands is south of Formosa? Where are the islands of Sumatra, Borneo, and Celebes?

Many of the islands east and southeast of Asia contain volcanoes, from which terrible outbursts of steam and lava sometimes occur.

Practice making a sketch map of Asia.

TOPICS ON POSITION AND COAST OF ASIA

I. Location and Size.
II. Each Coast Line. General direction. Projections. Indentations. Islands.

SURFACE

(*See Relief Map of Eurasia.*)

Which part of Asia is mostly lowland? Which part is mainly highland? Find the Pamir plateau in the highland region. What plateau is southeast of the Pamir? What plateau is southwest? What plateau is southwest of the plateau of Iran? What mountains are south of the plateau of Tibet? What plateau is south of the Himalaya Mountains?

From the Pamir plateau a succession of mountain ranges stretches westward to the Black Sea, and two chains extend eastward — one to the northeast and one to the east.

What is the westward range called, east of the Caspian Sea? south of the Caspian Sea? between the Caspian and the Black Sea? From these ranges the low plateau of Iran extends southward nearly to the coast. The lowlands about the Persian Gulf separate the plateau of Iran from another low plateau which occupies most of the peninsula of Arabia. What plateau is south of the Black Sea?

The mountains northeast of the Pamir plateau consist of many ranges; name three of them. The Kuenlun range extends eastward from the Pamir plateau, along the border of the plateau of Tibet. The Himalayas, on the southern border of Tibet, are the loftiest range of mountains in the world. Mount Everest, their highest peak, is over five miles high.

GROUP OF TIBETANS.

The plateau of Tibet is one of the highest plateaus in the world. It is more than twice as high as the western highland of the United States, and almost as large. What desert is between the Kuenlun and the Altai Mountains? It is a low, dry plateau. The plateau of Tibet also is dry, but being much higher is much colder than the Desert of Gobi.

These dry plateaus produce little vegetation except coarse grass; and the herding of sheep, goats, camels, and yaks is the chief occupation. The yak is an animal much like the ox, but has long hair.

The highlands are so broad and the mountains so lofty that they form a nearly impassable barrier between northern and southern Asia.

Like the peninsulas of Europe, the Asian peninsulas are either mountainous plateaus or spurs from the Eurasian highland.

The islands off the east coast of Asia are also really mountain ranges, the valleys between being covered by the ocean, and forming partly inclosed seas.

Northern Asia is a great lowland plain much like northern Europe. Along the Arctic Ocean is a frozen, moss-grown tundra; farther inland there are extensive forests; still farther south are open prairies, and in the southwest are dry steppes, covered with coarse grass.

Among the eastern and southern highlands are many broad lowland plains. Such are the plains of the Hoang, the Ganges, and the Indus rivers.

Model Asia; show mountains, plateaus, and lowlands.

TOPICS ON SURFACE OF ASIA

I. HIGHLANDS. General direction. Plateaus: Pamir; Tibet; Gobi; Iran; Asia Minor; Arabia; Dekkan. Mountains: Himalaya; Kuenlun; Thian Shan; Hindu Kush. Peninsulas.

II. LOWLANDS. Siberian plain. Plains of China. Plains of India.

THE YAK IS SOMETHING LIKE AN OX.

DRAINAGE

Name the three large rivers in the Siberian plain. In what direction do they flow? These rivers have branches flowing nearly east or west, and with head waters so near each other that it is only a short distance across the divides. The hunters and fur traders go from Russia far into this plain by means of these rivers.

Name four large rivers of the Pacific slope. The Amur flows through a fine grain-growing region. The Hoang, or Yellow River, is sometimes called "China's Sorrow," because of the loss of life and property caused by its overflows. The Yangtze and the Mekong rise in the high plateau of Tibet, and descend to the lowlands in deep gorges or canyons, through which few white men have ever passed.

What two rivers flow into the Bay of Bengal through the same delta? (See political map of Eurasia.) What river flows into the Arabian Sea? These three rivers drain both the north slope and the south slope of the Himalaya Mountains. What rivers drain into the Persian Gulf?

Beginning at the Ural Mountains, draw a line around the great region whose rivers do not reach the ocean. Much of this large interior basin is very dry, but it contains several lakes which have no outlets and are therefore salt. The Caspian Sea and Lakes Aral and Balkash are the largest of these. What rivers flow into Lake Aral?

There are fewer fresh-water lakes in Asia than in North America. The only large one, Lake Baikal, is about half as large as Lake Superior. What river is its outlet? Much trade is carried on across this lake by means of steamboats during summer, and by ice sleds in winter.

Sketch Asia; locate its large rivers.

TOPICS ON DRAINAGE OF ASIA

I. NORTHERN SLOPE. Ob; Yenisei; Lena.
II. EASTERN SLOPE. Amur; Hoang; Yangtze; Mekong.
III. SOUTHERN SLOPE. Brahmaputra; Ganges; Indus; Tigris and Euphrates.
IV. LAKES.

PEOPLE

What part of Asia is most thickly peopled? What parts of Asia contain very few people? Can you think of reasons why few people live in northern and central Asia?

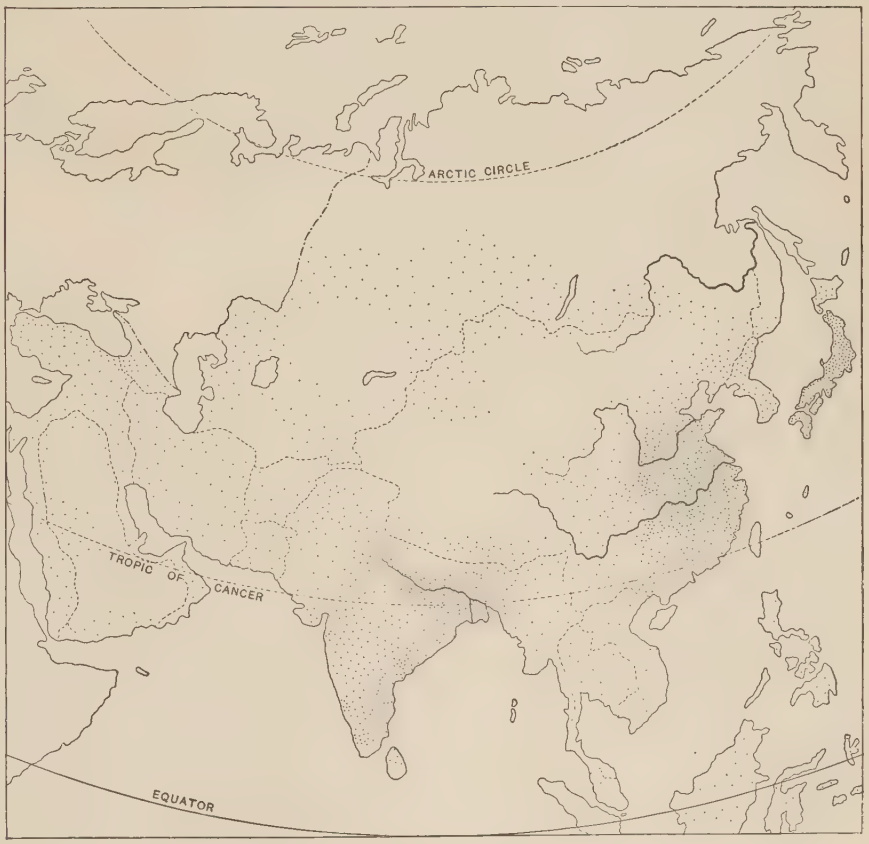
Southern Asia has a warm, moist climate, and food plants grow there in abundance. Nearly half the people of the world live in this part of Asia. In the parts of Asia that are too cold or too dry for food plants to thrive, few people are found.

In Asia, even more than in Europe, the people in the various countries differ in language, in religion, and in manners and customs. There are three different races of people in Asia.

The people of the yellow race live mainly in the eastern and northern parts of Asia. How do they differ from people of the white race? What people of the yellow race live in Europe?

The people of the brown race live mainly in the islands southeast of Asia, and in the Malay peninsula. Many of them are still savages, but some are civilized.

Most of the people of India and of southwestern Asia belong to the white race, though



THE DOTS SHOW WHERE MOST OF THE PEOPLE IN ASIA LIVE.

they have darker skin than the people of Europe. It is believed by many that originally the Caucasian or white race lived in the highland region in the neighborhood of the Hindu Kush Mountains, and that from this region they spread southeastward into India, and westward into the various countries of Europe. A few Russians, of the white race, have settled in northern Asia. This part of Asia, called Siberia, belongs to Russia.

THE CHINESE DRESS IN LOOSE ROBES.

TOPICS ON PEOPLE OF ASIA

I. DISTRIBUTION. Northern plain. Plateau and desert belt. Southeastern lowlands.
II. RACES. Caucasian. Mongolian. Malay.

CHINA

In what part of Asia are the Chinese possessions? In what zone is the greater part? What five countries comprise the Chinese possessions? Which of these countries lie in the highland region? Which lies partly in the lowlands? What two great rivers drain the greater part of China? Where do they rise? Into what waters do they empty?

China was for many centuries an absolute monarchy. A recent revolution overthrew the monarchy, after which a republican form of government was established. China with its dependencies is somewhat larger than the United States, and is the home of the greater part of the yellow race. The four dependencies belonging to China in the plateau and desert region of central Asia cover the largest part of the country, but contain few people. The fertile lowlands of China proper contain nearly one fourth of all the people in the world.

China is one of the oldest of nations. The Chinese printed books, used the mariner's compass, and made gunpowder long before these inventions were known in Europe; yet until recently they have made little progress, but lived very much as their ancestors did thousands of years ago. Now, however, they have adopted many new customs and better ways of doing things, and the use of modern inventions in place of their old-fashioned and awkward tools and machinery is increasing.

The men shave off their hair except a lock on the crown, which they wear in a long braid. Chinese ladies seldom walk well, because when they were young their feet were bandaged to prevent them from growing. Thus their feet are terribly deformed. Now these customs are gradually falling into disuse.

The Chinese dress in loose robes or jackets, with full sleeves, which they use as pockets. Their shoes have thick white soles.

The Chinese are very polite to one another. Even after he has grown up, a Chinaman

CHINESE LADIES.

obeys his parents while they are alive and worships them after they are dead. Although the Chinese were slow in adopting new ways, they are very clever in doing things in their old-fashioned ways, and are very industrious.

In China proper, farming is the chief occupation. Almost every foot of the land is cultivated, and along the rivers great rafts made of a kind of tall reed or cane, called *bamboo*, are covered with earth and used as gardens. Many thousands of people live on these rafts and on flatboats which are moored with them.

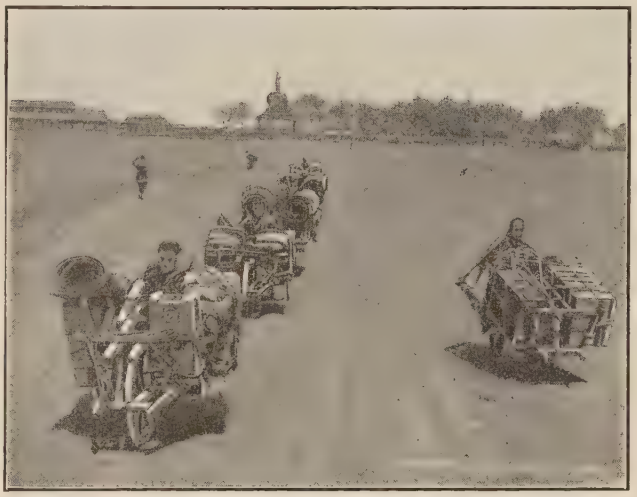
The hill slopes are terraced, and on them tea and many fruits and vegetables are raised, but in the lowlands rice and other grains are the chief crops. The rice is grown on land that can be easily flooded, and thousands of men and women may sometimes be seen wading in the rice fields, tending their crops.

Tea is the leaf of a shrub about four feet high. The leaves are picked three or four times a year. They are heated in shallow pans, rolled with the hands upon a table, and then dried in sieves over charcoal fires. Quantities of an inferior kind are pressed into "bricks." Much tea is shipped in lead-lined boxes to England and America. Much also is sent overland through Asiatic Russia into Europe.

The Chinese eat very little beef or mutton, but every hut has its pig, ducks, geese, and chickens. Fish cooked in lard or in oil is much used for food; but the chief food in China consists of rice and tea.

CHINESE PICKING TEA.

Famines often occur in China, when thousands of people starve to death. This is because, when the crops fail in parts of the country far from the railroads, food cannot be quickly brought from other regions, as there are not many good roads, and few horses and wagons. In much of China almost all the merchandise is carried on the backs of men, or on rude wheelbarrows, or on the rivers or canals in boats called *junks*.



CHINESE WHEELBARROWS.

The Chinese make many excellent and beautiful things, but mostly by hand. The best pottery and porcelain used to come from China, and to this day we call it *china ware*, even though it is made in the United States. The Chinese generally dress in cotton cloth. It was from the Chinese that the world learned to make silk cloth, and much of the finest and softest silk cloth still comes from China; but most of the silk exported from China is raw silk which is manufactured into cloth, ribbon, or thread in Europe or America.

Manchuria is crossed by the Khinghan Mountains, but there are many wide and

fertile plains, in which much wheat is raised. Mongolia and Chinese Turkestan are mostly desert or arid lands, where the chief industry is the herding of horses, cattle, and camels. Mongolia used to be the home of robbers, and long ago one of the emperors of China built a wall twelve hundred miles long to protect his

STREET IN PEKING.

people from them. Much of this wall is still standing. The high, cold plateau of Tibet has seldom been visited by white men.

Find Peking. It is the capital of China. Where is Canton? It is one of the largest of the many large cities of China, and an important seaport. Find Shanghai. It is the greatest seaport of China, and many foreigners live there.

Hongkong, a small island near the coast, belongs to Great Britain. Many foreign merchants live there in order to trade with China.

When, a few years ago, Chinamen were first permitted to leave China, many came to our Pacific states as laborers. Now, however, the laws of our country do not permit Chinese laborers to come to the United States.

Sketch Asia, showing the Chinese Possessions.

TOPICS ON CHINA

I. LOCATION, SIZE, AND CLIMATE. Divisions.
II. SURFACE. Plateaus and deserts. Fertile plains.
III. PRODUCTS. Rice. Tea.
IV. TRANSPORTATION.
V. PEOPLE. Race. Food. Handiwork. Cities.

A VOLCANO IN JAPAN.

JAPAN AND KOREA

What island empire is east of China? In what zone are most of these islands? What is the name of the largest island? Hondo is a little larger than Kansas. What is the name of the large island at the south end of the group? What sea lies between Hondo and the mainland? What ocean is east of these islands?

The Japanese islands are mountainous, and the scenery is very beautiful. There are many volcanoes and hot springs among the mountains, and earthquakes are frequent. The summers are warm and moist, but the winters are quite cold.

It is only in recent years that the Japanese have allowed vessels from all nations to visit their seaports. Since foreigners were admitted, Japan has made wonderful progress. Railways and telegraph lines have been built; good roads have been made; daily newspapers are published; a university has been established; and every town and village has its schools. The Japanese are the most progressive and civilized native people of Asia. They have been called the "Yankees of the East" because they are so clever and energetic.

The Japanese look somewhat like the Chinese, to whom they are related. The men are short but sturdy; the women, small and slight.

The houses are made of wood, with sliding walls in front which are pushed aside during

the day, showing the whole interior. Dressed in his long, loose gown with flowing sleeves, the Japanese squats upon the floor and sells his goods, using the floor as a counter. He

JAPANESE COOPER.

eats his meals from a tiny table. He manufactures by hand — sometimes by foot also, for his toes are almost as useful as his fingers. His wife squats near him, dressing her hair, or playing a kind of guitar, or boiling the rice for his dinner, while the children run about at play, the older one with the baby strapped to his back. At night the family close the sliding walls, and, after taking a hot water bath, pull out of the closets the quilts which serve as beds, and go to sleep on the floor, their heads or necks resting on little padded wooden stools. The food of the poorer people consists chiefly of rice, fish, radishes, and tea.

The Japanese, like the Chinese, raise silkworms and a great deal of tea. The camphor tree, and the tree from which is obtained the gum used in making lacquer varnish, grow on the mountain slopes. The Japanese are very fond of flowers; they call their country the "Land of the Chrysanthemum," and have festivals in spring in honor of the cherry blossom. Their small farms have no fences, for there are few cattle and fewer horses. In the cities passengers travel about the streets in little two-wheeled carriages called *jinrikishas*, drawn by men.

JAPANESE BED.

Almost everything made in Europe and America is manufactured also in Japan. Japanese silk, cotton yarn, coal, and tea are exported. The largest share of the exports of Japan is sent to the United States; but the imports come largely from Great Britain.

Steamship lines connect Japan with San Francisco, Seattle, and the chief ports of Europe and Asia. Yokohama is the chief seaport of foreign trade. Where is Tokyo? It is the capital. Its recent growth has been even more rapid than that of Chicago.

It was an American who first induced the Japanese to trade with the rest of the world, and many young Japanese attend our schools and colleges.

What is the name of the peninsula between the Japan Sea and the Yellow Sea? Korea was long a separate monarchy, but it is now controlled by Japan. Agriculture is the chief industry, and rice, wheat, and beans are grown. Like Japan and China, Korea, until recently, has had very little to do with the outside world. What is the capital of Korea?

Sketch Asia; locate Japan and Korea.

TOPICS ON JAPAN

I. LOCATION.
II. PRODUCTIONS. Agricultural. Manufactured.
III. PEOPLE. Appearance. Food. Houses. Progress.
IV. CITIES.

INDIA

Name the middle peninsula of southern Asia. What country includes this peninsula? In what zones is India? What mountains are north? What waters are east? west? What island is south? Describe the surface of India; the drainage.

India is not so large as the United States, but it contains nearly four times as many people. The southern half of India lies in the torrid zone, and nearly the whole country is very warm. During the summer months the winds blow from the sea and bring heavy rains, but during the winter months dry northerly winds prevail. These seasonal winds are called *monsoons*, a word which means "season."

The great glaciers of the lofty Himalayas get their snow from the southwest monsoon. The lower slopes of the mountains are covered by forests; at their foot are dense thickets called *jungles*. The river plains of northern India are the most fertile lands of the country.

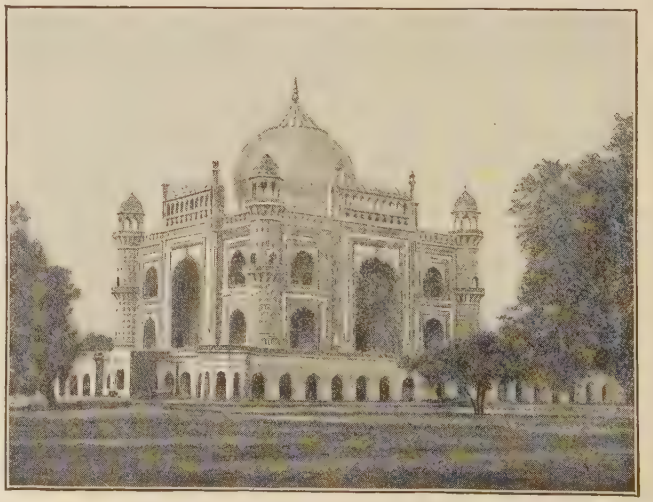
In the jungles are many wild animals — the tiger, the leopard, the elephant, the rhinoceros, and the hyena. The elephant is trained to carry heavy burdens and to drag timbers. The buffalo also is found, and the forests abound with monkeys and birds. The cobra of India is the most poisonous snake known.

Most of the domestic animals with which we are familiar — the horse, ox, sheep, dog, cat, hog, and chicken — came originally from this part of Asia, accompanying the white people to Europe, and from Europe to America. Many of our grains, fruits, and vegetables also came originally from this region.

India is thickly inhabited by people of different races and religions. The greater part are Hindus, who belong to the white race. They are divided into classes, called *castes*, which never mingle with one another. The priests, or Brahmans, are the highest caste. They have very old books filled with poetry and stories of their gods. People of the lowest caste are very poor. They wear only a strip of cloth about the hips, with perhaps another tied around the shoulders; they sleep in mean huts on short rope beds, and live on rice and water, with an occasional piece of fish. The women of the lower classes work in the fields, the mother with her baby on her back or astride of her hip.

India, like China, has been civilized much longer than Europe. It used to be composed of many native kingdoms. Most of the cities of India were founded long before Europeans visited the country. Many of them contain magnificent marble palaces, temples, and tombs, built by the native kings.

Elephants Working.



Marble Tomb at Delhi.

About 150 years ago the English began to conquer these Indian kingdoms, and now Great Britain controls nearly all of India.

Agriculture is the chief occupation in India. In the fertile Ganges valley there are many irrigating canals, and in the Dekkan plateau are large tanks to store the water which falls during the wet season.

Rice, peas, and millet, a grain like corn, are the chief food of the people. Wheat and tea also are grown; and much tea and some wheat are sent to Europe. The poppy is cultivated for the opium made from its juice.

Much flax is grown for the seed, from which linseed oil is pressed. We use this kind of oil in paints. Cotton, jute, and silk are produced. Much of the cotton is sent to England. Jute is used in making coarse bags and rope.

The Hindus manufacture fine shawls, carpets, rugs, gold embroidery thread, beautiful jewelry, and such delicate cotton cloth that they call it "woven wind." They have some modern factories, but most of their factory-made goods come from Europe.

Delhi is the capital of India. Where is Calcutta? It is the largest city and leading seaport. What port is on the west coast? It has a good harbor, and is connected with Calcutta by a railway. Where is Madras? It also is a market and seaport.

Sketch Asia; locate India.

TOPICS ON INDIA

I. Position, Extent, and Surface.
II. Climate and Rainfall.
III. Industries and Products.
IV. People. Numbers. Classes. Government.

CORRELATIONS AND COMPARISONS

Extent and Coast. — In what zones is Asia? What part of America lies in the same zone as the greater part of Asia? (See map of the zones.) What parts of America and Asia lie in the north half of the torrid zone? How does the size of Asia compare with that of North and South America combined? (See tables near end of book.) Which coast of Asia is least irregular? Which coast is bordered by the greatest number of islands? Which are the most important of these islands? Name six great seas on the east coast. Of what ocean do these seas form a part? Name a bay, two gulfs, and a sea on the south coast. Into what ocean do they open? What four seas border the western part of Asia? With what oceans are they connected?

Surface and Drainage. — What parts of Asia are mostly highland? What part is mostly lowland? Name six plateaus of Asia. How does the plateau of Tibet compare with the western highland of the United States in size and in elevation? Name three lowland plains of Asia. Which of them is the largest? Which of them has the smallest number of inhabitants? Mention some reasons why the two smaller lowlands are better fitted for a dense population than the great Siberian lowland; than the great highland.

Name three great rivers of the northern slope of Asia; four of the east slope; two of the south slope which flow into the Bay of Bengal through the same delta; one river which flows into the Arabian Sea; two which drain into the Persian Gulf. Name three lakes or seas of Asia which have no outlet.

Products. — Sketch or trace a map of Asia, and write in the proper places the names of important products: rice, wheat, tea, cotton; silk, yaks, elephants; coal.

By what two routes may tea be shipped from China to the United States? By what routes may tea be sent from China to western Europe? Name a country in Europe where silk is manufactured; one in America. From whom did the Europeans learn to make silk? What raw material is shipped from India to England? What other country produces the same kind of raw material?

People and Countries. — What three races have their home in Asia? What part of Asia is the home of each? What two countries on the mainland and what island empire contain most of the people of Asia? What five divisions comprise the Chinese possessions? Tell some facts about the people, industries, products, and government of Japan; China; India. Compare the Chinese possessions with the United States in size and in population.

Cities. — Give the location and some fact concerning each of the following cities: —

Tokyo	Peking	Canton	Madras
Yokohama	Shanghai	Calcutta	Bombay

AFRICA

AFRICA. (Same scale as maps of North America, South America, Eurasia, and Australia.)

POSITION AND COAST LINE

Compare this map of Africa with those of North America and of Eurasia. How does Africa compare with those grand divisions in size? What sea is north of Africa? What ocean and gulf are west? What sea, gulf, and ocean are east of Africa? By what isthmus is Africa joined to Asia?

What part of Africa is crossed by the equator? In what zones is Africa? It is the hottest of all the grand divisions.

Which has the greater number of bays and peninsulas — Africa or Eurasia? Africa or North America?

Columbus was searching for a western route to India when he discovered America. At that time Portuguese sailors were hunting for an eastern route to India. When they discovered and passed the cape near the southern end of Africa, the king of Portugal named it Good Hope, because he believed that the route to India had been found. What shorter water route is there from Europe to India?

What large island is east of Africa? How is it separated from the mainland? Name three groups of islands west of Africa. There are active volcanoes on the Canary Islands and the Cape Verde Islands, and the Madeira Islands are composed of old volcanic rocks. Canary birds are named from the Canary Islands, where they are found.

Practice making a sketch map of Africa.

TOPICS ON POSITION AND COAST LINE OF AFRICA

I. LOCATION. Waters surrounding. Circles crossing.

II. SHAPE. Its length and its breadth. Its three coast lines. Its outline. Islands near.

III. SIZE. Comparison: with Eurasia; with North America.

RELIEF AND DRAINAGE

Trace the divide between the Indian Ocean slope and the Atlantic slope of Africa. On which side of the divide is the longer slope? What four rivers are on the longer slope? To what ocean do they flow? What river is on the shorter slope of Africa? To what ocean does it flow?

Southern Africa is a great plateau, from which long arms of highland extend far northward along the east and west coasts. From the edge of these highlands the surface slopes steeply down to the narrow plains which fringe the coasts of southern Africa. In the southeast the edge of the plateau forms a well-marked mountain range. What is its name?

NATIVES AND BOATS IN THE SUDAN.

Where is the highland of Abyssinia? This is a lofty plateau with a climate much cooler than that of the surrounding parts of the grand division. Name two mountain peaks south of this plateau. They are the highest points in Africa.

Northern and central Africa is mostly a vast lowland region. But this lowland is bordered on the northwest by a high mountain chain. What is its name?

In the central part of Africa, on each side of the equator, is a broad, fertile belt of land which has a very heavy rainfall. North of the equator this region is called the Sudan. In what part of Africa are most of the lakes? Name one lake north of the equator; three lakes south of the equator. Lake Victoria is about as large as Lake Superior in North America. What large river system lies within this moist equatorial region? What large lake is in the Kongo basin? What large river is

in the western Sudan? Into what gulf does it flow?

The region north of the Sudan is very dry. What is it called? The name *Sahara* means "the desert." The Sahara extends from the Atlantic Ocean to the Red Sea, and is the largest desert in the world. Its surface is low and sandy in some places, and rugged and rocky in others. In what direction do the mountains which cross it extend? What large river crosses the Sahara to the Mediterranean Sea? Next to the Mississippi-Missouri, the Nile is the longest river in the world. In what lake does it rise?

Scene in the Sahara.

Much of southern Africa between the Zambezi and Orange rivers is also very dry. Where does the Orange River rise? Into what does it flow? To what ocean does the Zambezi flow? What lake is in the basin of this river?

Nearly all the large rivers of Africa have rapids or falls where they flow from the plateau to the low coast plains. Steamboats can ascend the Nile to the first cataract,—about eight hundred miles,—but in the Kongo the rapids begin a little over a hundred miles from the sea. The falls of the Zambezi River are among the grandest in the world. Below these falls the river flows for a long distance at the bottom of a deep, narrow, and steep-sided canyon in the plateau.

Practice a sketch map of Africa. Show its chief mountains and rivers.

Victoria Fall on the Zambezi.

TOPICS ON RELIEF AND DRAINAGE OF AFRICA

I. Surface. General elevation: in north; in south. Mountain border. Coast plains.
II. Regions. The Sahara. The Sudan.
III. Rivers. The Nile. The Kongo. The Niger. The Zambezi.
IV. Lakes.

PEOPLE

Africa contains more inhabitants than North America, and about two thirds of them belong to the black or negro race. The home of the negro is the region south of the Sahara.

The black men in America have become civilized by living with the white people, but in Africa most of the negroes are uncivilized and are frequently at war. Many of the tribes, however, raise corn and other grain to feed to their herds of cattle, and some of them have learned to make cloth and leather.

Most of the negro tribes live in villages, some of which contain hundreds of low huts. The negroes are fond of dancing and of music that is often harsh and disagreeable

NEGRO GIRLS WITH BEAD ORNAMENTS.

to white people. Some tribes are so fond of ornaments that it is common to see a negro with his nostrils or lips pierced and ornaments fastened in the holes. Many of them grease and paint their bodies, and wear little or no clothing.

The northern coast of Africa is more like the neighboring countries of Europe than like central Africa, from which it is separated by the Sahara, or Great Desert. Its people are mainly Berbers and Arabs; they belong to the white race, but, like the Turks, they believe in the Mohammedan religion. Some of the Berbers are civilized, but many are half civilized, with no fixed homes. They wander about the country with their herds of cattle and camels, sometimes plundering caravans.

The Berbers once occupied all the country from the Red Sea to the Atlantic Ocean, but about a thousand years ago Arabs came over from southwestern Asia, and their descendants are to-day the traders of northern Africa. The Arabs wear flowing robes and turbans, and are among the finest horsemen in the world. Nearly all the trade between the interior and the coast is by means of Arab caravans.

ARABS WEAR FLOWING ROBES AND TURBANS.

In southern Africa and along the coast are European colonies.

Sketch Africa, showing where the negroes, Berbers and Arabs, and European colonists live.

TOPICS ON PEOPLE OF AFRICA

I. INHABITANTS. Number. Races.
II. NEGROES. Home. Appearance. Civilization.
III. BERBERS AND ARABS.
IV. EUROPEAN COLONISTS.

INDUSTRIES

The industries of the northern coast of Africa, like the people, are similar to those across the Mediterranean Sea. But central Africa is so hot and wet, its coasts are so unhealthful, and its interior is so difficult to reach, that only recently has it been explored by Europeans. Its products are very different from those of the other grand divisions.

The people from the Mediterranean coast can not easily cross the Great Desert to the south. It is only by means of camels that the Sahara can be traversed. But these animals are constantly crossing the Sahara into the Sudan, carrying salt, cloth, knives, and trinkets. These are traded to the natives of the interior for ivory, gold dust, and ostrich feathers, which are brought back across the Sahara to the markets near the coast.

Elephants are found all over the great central region of Africa, and are being killed off for their ivory tusks. Ivory is a valuable product of Africa, and much of it is exported every year. For what is ivory used?

Slavery still exists in some parts of Africa, in parts of Asia, and in European Turkey. In the rest of Europe and in America it is no longer permitted. Thousands of men, women, and children in central Africa have been torn from their families and sold into slavery. Slaves were driven across the Sahara to be sold, but the slave trade has been stopped in most parts of Africa.

Few animals live in the Sahara, but one of them is the ostrich, a huge bird that stands about seven feet high. The ostrich does not

fly, but it is so swift a runner that a horse can hardly overtake it. Its feathers are used as ornaments. In the Sahara the ostrich is wild, but in southern Africa there are many ostrich farms. Great care is given to the raising of young birds, and the plumes are carefully cut each season. These ostrich farms furnish most of the world's supply.

Gold is found in many parts of Africa, and has had much to do with its settlement. Until gold was found in California most of the coin of Europe was made of gold from the west coast of Africa. There are now rich gold and diamond mines in southern Africa.

Sketch a map of Africa, showing where ivory, gold, and the ostrich are found.

TOPICS ON AFRICAN PRODUCTS

I. Ivory. What it is. How obtained. Use.
II. Slaves. Where captured. Where sold. The slave trade.
III. Gold and Diamonds. Where found.
IV. Ostriches. The wild ostrich. Ostrich farms.

CHIEF COUNTRIES

Point out the countries colored purple on the map of Africa. They are controlled by France. Point out those colored red. They are controlled by Great Britain. Find three areas that belong to Germany; two that belong to Portugal; one that belongs to Belgium. Abyssinia is an independent kingdom. Libia is controlled by Italy.

Egypt is several hundred miles broad, but the only part in which people can live is the flood plain of the Nile, rarely over four or five miles wide. On each side of this narrow strip is the hot, dry desert.

Except in the north scarcely a drop of rain falls on this flood plain, and the crops must be irrigated from the Nile. Once a year, the rains in the highland of Abyssinia cause the river to overflow its banks on either side. When the flood subsides, there is left a coating of mud over the land, which yields wonderful harvests of cotton, sugar, rice, and wheat. These fertile lowlands of the Nile are very densely populated.

The Egyptians are a mixed race. Most of them are of Arab and negro blood, and are Mohammedans.

Egypt has a native ruler or sultan, but its real rulers are the British, who control the Suez Canal.

Find Cairo. It is the capital of Egypt. Near it are the pyramids. These were built many thousand years ago as tombs for kings.

The Pyramids, Egypt.

Find Alexandria, the chief seaport.

Name the four countries along the Mediterranean Sea west of Egypt. They have a climate not unlike that of southern California. They are called the Barbary States, after the Berbers, but many Moors, Arabs, Jews, and negroes also live in these states.

Algeria is the most important and prosperous foreign possession of France. Find Algiers. It is the largest city and seaport.

South of the Sahara is a broad belt of fertile and well-watered land called the Sudan, a word which means "black." It is in this part of Africa that the most civilized negro tribes live. They cultivate cotton and grain, own herds of cattle, and manufacture cotton cloth and leather goods.

What colony occupies most of the Kongo basin? This region is covered with dense forests, and is the home of many million people.

What large animal found in much of this region is hunted and killed? Ivory and rubber are valuable exports. In what respects is the Kongo basin like the rubber-producing region of South America? The rubber of the Kongo basin, however, comes mostly from vines and not from trees, as does that of the Amazon basin.

The provinces of Cape of Good Hope, the Transvaal, Orange Free State, and Natal form the Union of South Africa, which has a government very much like that of Canada. The governor-general is appointed by the British sovereign, but each province has its own local government.

Many of the white people of South Africa are British, and many are Boers, or descendants of early Dutch settlers. The thrifty Boers are engaged chiefly in farming and herding. The rich gold and diamond mines are largely in the hands of the British. Gold and diamonds, wool, grain, hides, and ostrich feathers are exported.

More diamonds come from the mines near Kimberley than from all the rest of the world. Johannesburg is the gold-mining center. Find these cities on the map.

Railways have been built through much of this region to seaports on the southern and southeastern coasts. Cape Town is the principal seaport of southern Africa.

Many of the black people are becoming civilized. They tend the herds and do much of the work on the farms, as well as in the mines.

Sketch Africa; show Egypt, Algeria, and Cape of Good Hope and adjacent British provinces. Locate Cairo, Algiers, and Cape Town.

TOPICS ON CHIEF COUNTRIES OF AFRICA

I. European Countries controlling Africa.
II. Chief Countries of Africa. Egypt. Algeria. Belgian Kongo. South Africa.
III. Products.
IV. Chief Cities.

CORRELATIONS AND COMPARISONS

Extent and Coast. — In what zone is the greater part of Africa? What other grand division lies mostly in the torrid zone? Into what other zones does Africa extend? Does any other grand division extend into all three of these zones? Name a winter month on the north coast of Africa; on the south coast. How does Africa compare with North America in size?

What oceans and seas border Africa? What great gulf is on the west coast? Name three small island groups near the northwest coast. What large island is near the southeast coast? What channel separates Madagascar from the mainland?

Surface and Drainage. — What part of Africa is mostly highland? mostly lowland? What mountains are in the northwest? in the southeast? in the east near the equator? What highland is in the east, north of the equator?

What four great rivers are on the Atlantic slope of Africa? Where does each have its source? In what direction and into what does each flow? What great river is on the Indian Ocean slope? Into what does it flow?

What and where is the Sahara? What makes it a desert? Do any plants grow in this region? Where is there another dry region in Africa? Where and what is the Sudan? In what respects does it differ from the Sahara? Where is the forest region of Africa? How does this region differ from the northern part of the Sudan?

People and Countries. — To what race do most of the people of Africa belong? What part of Africa is the home of the black race? To what race do the people of northern Africa belong? What natural barrier separates northern Africa from the land of the blacks? How is this barrier crossed?

Name five countries on the north coast, beginning at the west, and give some fact concerning two of them Mention some European possessions in central and southern Africa. Sketch or trace a map of Africa and mark in the proper places the names of five important products.

Cities. — Locate and tell some fact concerning Cairo, Algiers, Cape Town.

AUSTRALIA AND ISLANDS OF THE PACIFIC

AUSTRALIA

In what direction from Asia is Australia? What tropic crosses it? What grand divisions of the other continents are crossed by the same tropic? In what zones is Australia? What are the winter months in southern Australia? What ocean is east of Australia? What ocean is south and west? In what part of Australia are the highlands? In what part are the longest rivers? Practice drawing an outline map of Australia.

AUSTRALIA. (Same scale as maps of North America, South America, Eurasia, and Africa.)

Australia, the smallest of the continents, is not quite so large as the United States.

The surface is mostly a low, dry plateau, with ranges of mountains near the east coast. In the southeast the mountains are separated from the interior plateau by broad lowlands. The principal rivers are in these lowlands.

UNDERGROWTH IN A NORTHERN AUSTRALIAN FOREST.

They are quite large during part of the year, but in the dry season most of them dry up or sink into the sandy soil. The lakes are salt marshes or shallow pools.

Over the interior, strange shrubs and spiny grasses form a thicket so tangled and bristling that only a few wild animals can crawl through it. There are forests on the mountain slopes in the east, and near the northern coast. But even here the vegetation is unlike that of other lands. Some of the forest trees are among the tallest in the world, some shed their bark in winter instead of their leaves, and the leaves of others grow with their edges turned toward the sun.

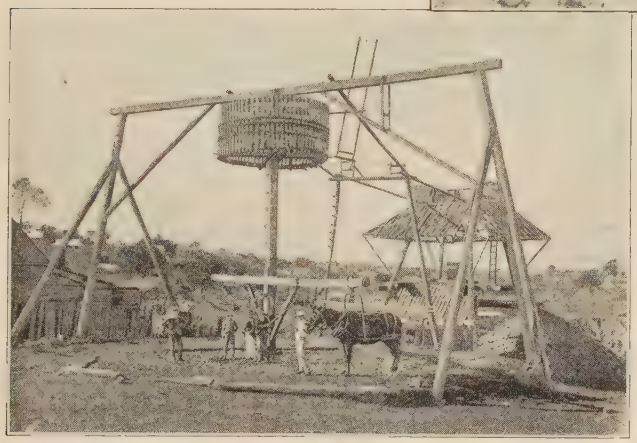
The animals of Australia are even stranger than the plants. Many of the native birds are like those of Asia, but most of the four-footed animals are *pouched* like the opossum. On the breast of the mother is a pouch in which the young are carried for some time after

birth. There are many kinds of these pouched animals. The largest is the kangaroo, which has powerful hind legs on which it travels swiftly by jumping, without touching its weak fore legs to the ground.

The natives are black savages, very degraded and ignorant. Few of them now remain.

Native Australians.

About a hundred years ago few white men lived in Australia, and the English sent their criminals to live there instead of keeping them in prison in England. Soon it was found that Australia was a fine country for sheep farming. Then free colonists began to go there. By and by gold was discovered, and at last England stopped sending criminals there.



Hoist at an Australian Gold Mine.

The gold mines are now among the richest in the world, but the chief occupation of Australia is sheep farming. Over one fourth of the world's wool product is grown in Australia, and great quantities are exported, chiefly to England. Tallow, hides, leather, and meats are exported also, as well as wheat and flour, gold and tin. In exchange for these, manufactured articles are sent from the mother country.

Australia is divided into five states, which, with the island of Tasmania, form the Australian Commonwealth. A governor-general is appointed by the British sovereign, and the parliament is chosen by the people. Melbourne is the temporary capital of the Commonwealth.

What is the name of the most southern state? Victoria is the greatest gold-producing region. What is its capital?

What state is north of Victoria? New South Wales is the richest and most populous state of Australia. Its capital is a port for steamships from San Francisco and Vancouver.

What state is north of New South Wales? Sugar is raised in Queensland. Name the capital. In South Australia only a few square miles along the coast are productive. What is the capital and chief seaport of South Australia? of Western Australia?

Railways have been built from the larger cities of Australia to the ranches and mines in the interior, and the inhabitants are among the foremost people of the world in their modes of government and education.

Loads of Australian Wool.

Though Australia is nearly as large as the United States, it contains but half as many inhabitants as the state of New York.

ISLANDS OF THE PACIFIC

What island is just south of Australia? Tasmania is a plateau with very fertile valleys. For a long time convicts were sent there as well as to Australia. The chief exports are copper, silver, and wool. What is the capital?

What group of islands is southeast of Australia? What large island is north? What is the name of the sea east of Queensland? What coral reef lies in this sea?

The large islands near Australia are rugged plateaus with high mountain ranges. Some of the small islands shown on the map are the tops of volcanoes which are partly covered by the sea; others are low coral islands.

New Zealand is a volcanic region, containing geysers like those of the Yellowstone Park. The two large islands are together about twice as large as the state of New York. Sheep raising is the chief industry, and wool and

BATHING IN A GEYSER, NEW ZEALAND.

A PLANTATION, FIJI ISLANDS.

meat are exported. New Zealand is a part of the British Empire, and most of the people are of English descent. The natives, called Maoris, belong to the Malay race. What is the capital? Where is Auckland? Steamships from San Francisco call at this port. Lines of railway have been built through the islands.

The Fiji Islands, north of New Zealand, are a small British colony. The native Malays have been so far civilized that they now work on the plantations, from which sugar, fruit, and cocoanuts are sent to New Zealand and Australia.

New Guinea is owned by the Dutch, British, and Germans; but very few white people live there, and the natives are savages.

The Hawaiian Islands are a group of small islands in the Pacific Ocean, near the Tropic of Cancer, and about two thirds of the distance from Sydney to San Francisco. They form a territory of the United States. While Americans own the greater part of the land, most of the inhabitants are Japanese, Chinese, Portuguese, and natives. Most of the sugar used on the Pacific coast of our country is made from Hawaiian sugar cane. Honolulu, the capital, is an important stopping place for steamships.

NATIVES' HUTS, NEW GUINEA.

GRASS HOUSE, HAWAIIAN ISLANDS.

TOPICS ON AUSTRALIA AND ISLANDS OF THE PACIFIC

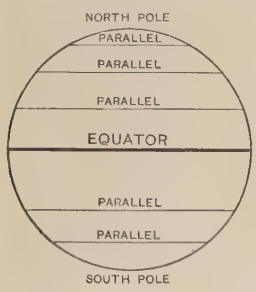
I. HISTORY OF AUSTRALIA. Settlement. Government. States. Cities. Trade relations.

II. DESCRIPTION OF AUSTRALIA. Surroundings. Surface. Vegetation: native; cultivated. Animals. People.

III. ISLANDS OF THE PACIFIC. Tasmania. New Zealand. Fiji Islands. New Guinea. Hawaiian Islands.

LATITUDE AND LONGITUDE

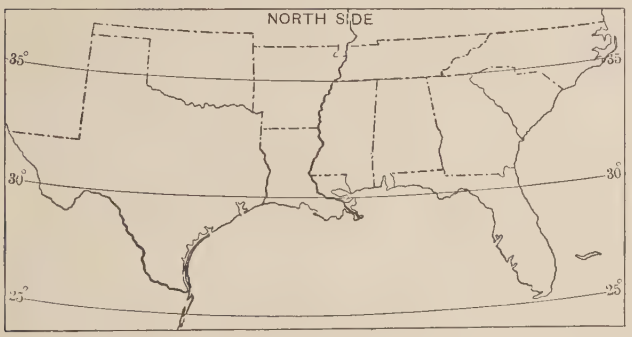
As we have learned, the equator extends east and west around the earth, just halfway between the north pole and the south pole.



We may imagine any number of east and west lines extending around the earth on either side of the equator, or we may draw them on a globe. Such lines are called *parallels of latitude*, and several are shown on the above diagram.

For convenience in telling how far a parallel is from the equator, the distance from the equator to either pole is divided into ninety equal parts, called *degrees* (marked °). The degrees are numbered both north and south from the equator to each of the poles. The parallel 1° north of the equator is in 1° north latitude. The parallel 20° south of the equator is in 20° south latitude, and so on. The north pole is in 90° north latitude, and the south pole in 90° south latitude.

Parallels are usually drawn on maps and numbered. They indicate the directions east and west on the map, and the number indicates how many degrees each parallel is from the equator. Are the parallels on the sketch below in north or in south latitude? How can you tell?



We may imagine any number of north and south lines extending from pole to pole across the equator and parallels, as in the next diagram. Such lines are called *meridians*. The distance between meridians is called *longitude*, and, like latitude, is reckoned in degrees. But it is measured eastward and westward halfway around the earth, from a selected *prime meridian*. The meridian of 90° west longitude is one fourth the distance around the earth westward, and the meridian of 90° east longitude is one fourth of the distance around the earth eastward, from the prime meridian. The meridian of 180° west longitude is the same as the meridian of 180° east longitude, and is just halfway around the earth from the prime meridian.

Any meridian may be selected as the prime meridian, but the one passing through the Observatory of Greenwich, in London, England, is generally used.

Meridians, as well as parallels, are usually drawn on maps and numbered. They indicate the directions north and south on the map, and their numbers indicate how far around the earth the meridians are from the prime meridian.

Turn to the map of the Southern Section of the United States and point out the meridians; the parallels. Point to New Orleans on the map. What is its latitude? What is its longitude? No other place on the earth can have exactly the same latitude and longitude. Thus the position of a place is described clearly by stating its latitude and longitude.

The latitude of any place may be ascertained by measuring the distance of the polar star above the horizon; its longitude may be ascertained by observing the difference between its sun time and that of the prime meridian.

How does the land surface of the globe compare in extent with the water surface? About which pole is the larger ocean? Which oceans extend from one polar region to the other? Which ocean is really a great bay? Compare the Atlantic and Pacific oceans in number of tributary rivers, and in irregularity of coasts. Compare them in civilizations on their coasts, and in number of seaports.

Compare the northern and southern hemispheres as to land and water. Name the grand divisions in the order of their size.

Locations. — What grand divisions lie wholly in the northern hemisphere? What grand divisions are crossed by the equator? by the Tropic of Cancer? by the Tropic of Capricorn? by the polar circles?

Outlines. — Which grand division has the most regular outline? the most irregular outline? Make a list of the peninsulas of Eurasia; of North America. What is the largest sea nearly inclosed by a continent? How is it connected with the oceans?

Highlands. — What highland is between the Cape of Good Hope and the Red Sea? What plateaus are between the Red Sea and Bering Strait? What mountains? What part of the highland of Eurasia extends into Europe? What line of highlands extends from Bering Strait to Cape Horn? What plateaus does it include? What mountains? Beginning at Cape Horn, make a list of the plateaus and mountain ranges of the great highland regions which extend from this cape to the Cape of Good Hope. Beginning with South America, make a list of the mountains of the world which are not included in the preceding list.

Rivers. — Into what ocean does the long slope of Africa drain? of Eurasia? of North America? of South America? Beginning at Cape Horn, make a list of all the large rivers of the world which empty into the Atlantic or the Arctic Ocean. Beginning at Cape Horn, make a list of the large rivers of the world which empty into the Pacific or the Indian Ocean. How does the Pacific and Indian Ocean slope compare in length with the Atlantic and Arctic Ocean slope in each grand division? Which slope has the more large rivers? the more extensive plains?

Plains. — Where are the grassy plains of Eurasia? Where are the grassy plains of America? of Africa? What are they called in North America? in South America? in Eurasia? What animals are found in the Sudan? What animals are found on the llanos? on the pampas? in Australia?

People. — Make a list of cities found in the highland regions of the world; a list of cities in the lowland regions. Which list is the longer? Why? Which grand division has the most people? Which one is second in population? Which has the fewest people? Which race went to Australia from Europe? What races live in Africa? Which went there? From what grand division? What races live in Eurasia? In what parts does each mostly live? What races live in America? Which came here? From what grand division? What race has spread over the whole world as conquerors?

Rainfall. — In what zone does most rain fall? In what part of the zone is the rainfall heaviest? What large rivers of the world have most of their basins in equatorial regions? Where are the rainless regions of Africa? of Eurasia? of America?

Natural Products. — Make on the board a list of the chief food plants which you have learned about. Put after each the names of the regions where it grows. Find out whether these regions are alike in climate; in surface. Tell how each of these regions can find a way to export its products. Make a list of the regions of the world where animals graze. Find out whether these regions are alike in climate; in surface. Tell how they export their products. Make a list of the chief minerals which you have learned about. Put opposite each the name of the grand division where it is found.

Manufactures. — What have you learned are the two great manufacturing grand divisions? What minerals are found in those grand divisions? Which grand divisions carry on the most trade? Why?

Latitude and Longitude. — Through what European countries does the meridian of Greenwich pass? Through what countries of Africa? Through what northern sea does the 180th meridian pass? Near what important groups of southern islands? What meridian passes through eastern Nova Scotia? Through what countries of South America does it pass? What country of South America is directly south of the Isthmus of Panama? What states of North America are directly north of the Isthmus of Panama?

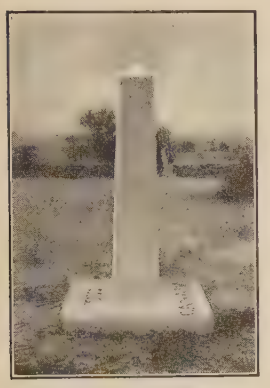
Are the Japan Islands or the British Isles farther north? What country of North America is in the same latitude as the British Isles? Compare the climate of the two countries. What countries of Europe are in about the same latitude as New York? Compare their climate with that of New York. Which is colder — Cape Horn or Cape of Good Hope? Why? Which city is the farthest south, Melbourne, Valparaiso, or Cape Town? Compare the islands of Tasmania, New Zealand, and Tierra del Fuego in latitude. Compare the West Indies with the Sahara in latitude; in climate. Explain the difference.

GEOGRAPHY OF NEW YORK STATE

POSITION, FORM, AND SIZE

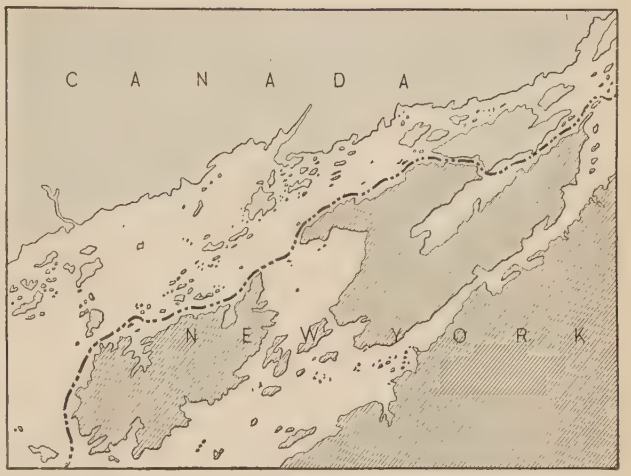
Position. In what part of America is the United States? (See the political map of North America in this book.) In the northeastern part of the United States, bordering on two of the Great Lakes, is the state of New York. For its exact location, and its size as compared with the other states, study the large political map of the United States.

Form. The shape of the mainland part of New York is roughly triangular, the northwest side being a little the longest, and the east side a little the shortest. On the large map of New York state shown on page ii you can trace its entire boundary on both land and water. Often such boundaries separate people who are living under one set of laws from others who live under different laws. For that and other reasons very careful surveys are usually made, and permanent boundary markers or monuments are put up.



BOUNDARY STONE.

The clear marking of a boundary line is often a very important matter. Houses, villages, and even cities are sometimes so located that a boundary line passes through them, leaving a part in one and the remainder in another state or country. The picture shows one of the monuments used to mark the boundary between New York state and Canada.



BOUNDARY IN PART OF THE ST. LAWRENCE RIVER.

When such permanent boundary markers are used, land boundaries are very easy to trace, but water boundaries always present difficulties. They are usually described as a given number of miles off shore, when the body of water is the ocean, and as passing through the middle of a lake or following the deepest channel of a stream. When there are many islands, as in the St. Lawrence River, the boundary line sometimes winds in and out among them, giving the very crooked sort of boundary which we find in this case.

Size. New York state is neither the largest nor the smallest of the states in the Union. Its width from north to south is $4\frac{1}{2}$ degrees of latitude, or more than 300 miles; and its length from east to west is still greater. Its area includes 47,654 square miles of land and 1550 square miles of water surface. Its total area would make forty states the size of Rhode Island, while it would take five states the size of New York to make one Texas.

COMPARATIVE AREAS OF TEXAS, NEW YORK, AND RHODE ISLAND.

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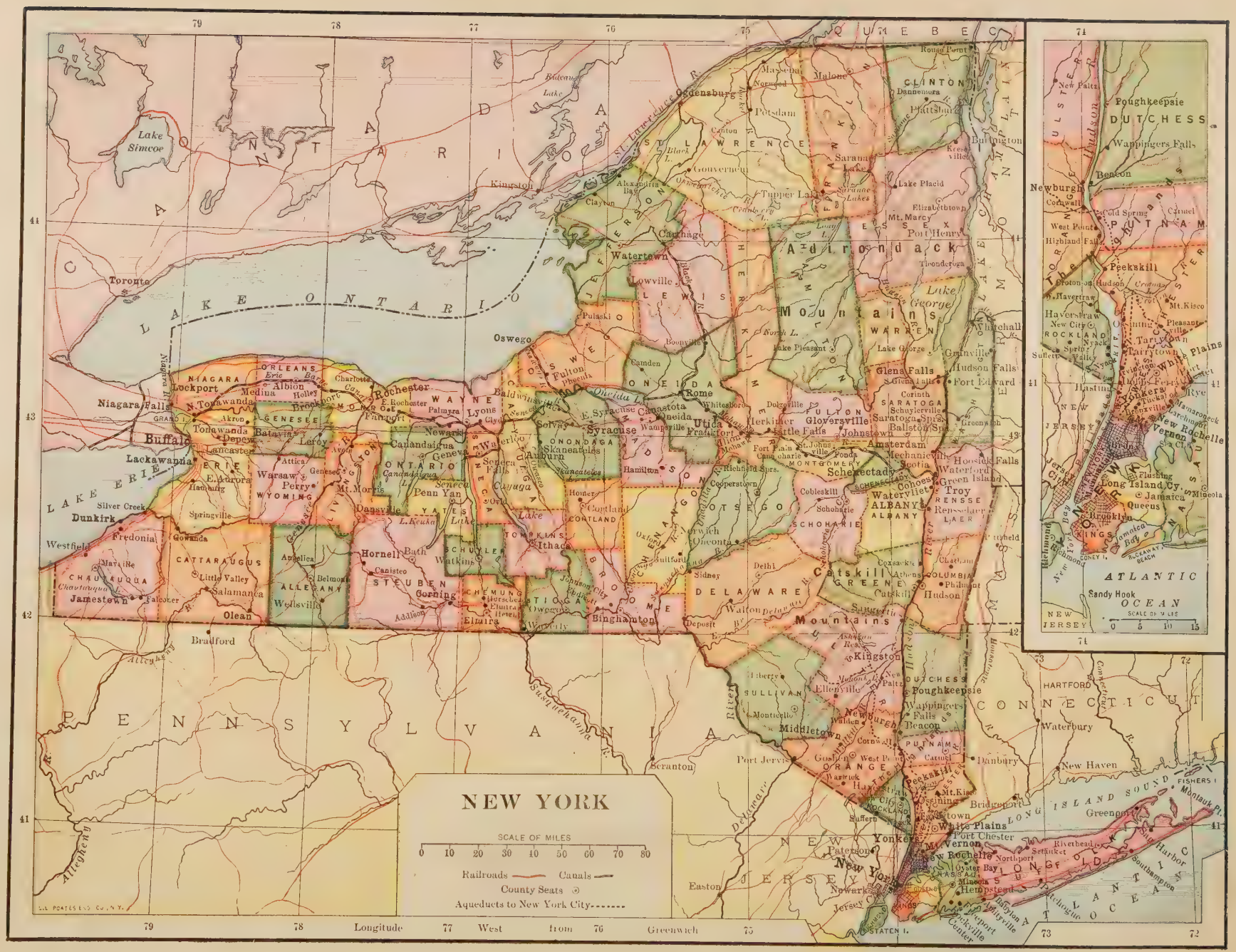
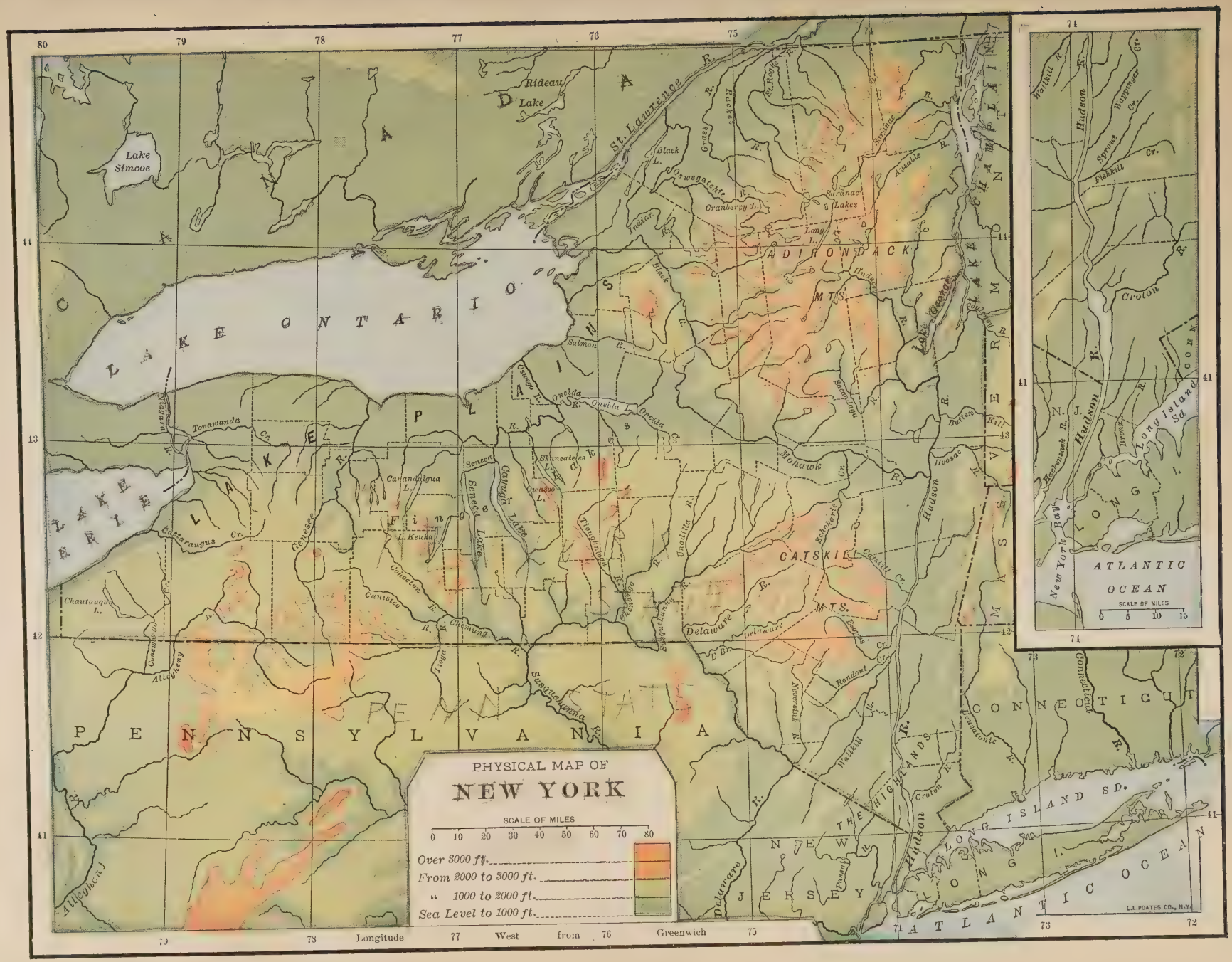
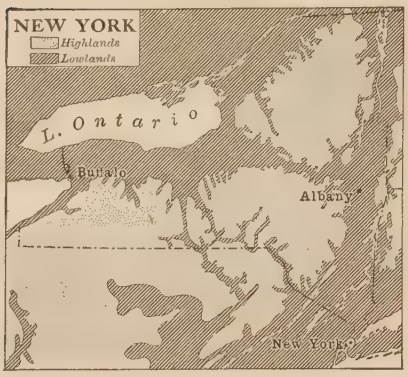

NEW YORK
SCALE OF MILES
0 10 20 30 40 50 60 70 80
Railroads
Canals
County Seats
Aqueducts to New York City
Longitude West from Greenwich
79 78 77 76 75 74 73 72
41 42 43
ATLANTIC OCEAN
Lake Ontario
Lake Erie
Lake Champlain
Adirondack Mountains
Catskill Mountains
Long Island
Long Island Sound
Hudson River
Niagara River
St. Lawrence River
Delaware River
Susquehanna River
Allegheny River
Genesee River
Mohawk River
Oswego River
Chemung River
Finger Lakes
Canada
Pennsylvania
New Jersey
Connecticut
Buffalo
Rochester
Syracuse
Albany
Troy
Schenectady
Utica
Binghamton
Elmira
Ithaca
Jamestown
Niagara Falls
Lockport
Dunkirk
Olean
Bradford
Corning
Hornell
Watkins Glen
Oswego
Watertown
Ogdensburg
Plattsburg
Saratoga Springs
Glens Falls
Poughkeepsie
Newburgh
Kingston
Middletown
Port Jervis
Monticello
Yonkers
New York
Jersey City
Newark
Paterson
Staten I.
Coney I.
Sandy Hook
Montauk Pt.
Greenport
Southampton
Hartford
Waterbury
New Haven
Danbury
Bridgeport
Stamford
Greenwich
Rockland
Orange
Putnam
Dutchess
Columbia
Greene
Delaware
Otsego
Chenango
Broome
Tioga
Chemung
Steuben
Allegany
Cattaraugus
Chautauqua
Erie
Niagara
Orleans
Genesee
Wyoming
Livingston
Ontario
Yates
Schuyler
Tompkins
Cortland
Onondaga
Oneida
Madison
Herkimer
Fulton
Montgomery
Schoharie
Rensselaer
Albany
Saratoga
Washington
Warren
Essex
Clinton
Franklin
St. Lawrence
Lewis
Jefferson
Oswego
Westchester
Putnam
Rockland
Orange
Sullivan
Ulster


PHYSICAL MAP OF
NEW YORK
SCALE OF MILES
0 10 20 30 40 50 60 70 80
Over 3000 ft.
From 2000 to 3000 ft.
" 1000 to 2000 ft.
Sea Level to 1000 ft.
Longitude West from Greenwich
ATLANTIC OCEAN
SCALE OF MILES
0 5 10 15
L.L.POATES CO., N.Y.

It is of course easy to think of just how large one square mile really is. It is much more difficult to know just what we mean when we talk of thousands of square miles. It may help us to understand about the size of New York state if we remember that a trip from New York city to Rouse Point takes about ten hours of travel on fast trains; and a trip from Albany to Buffalo about six hours on a very fast train.



the valley of the Hudson River. These two river valleys, with the lake plains, furnish a most convenient route from the ocean into western New York, and give easy admission to the western part of our country.

East of the lowlands which border Lake Ontario and the St. Lawrence River, west of Lake Champlain, and north of the Mohawk valley, is a region of mountains.

RELIEF

Turn to the physical map of the state, page iii, and study it carefully. Most of the state is high and rough. The land which is most nearly level is found around the eastern end of Lake Erie and along the southern shore and eastern end of Lake Ontario. These "lake plains," as they are called, form a broad belt south of Lake Ontario, and are separated into a northern and a southern part by an abrupt slope not high enough to be shown on the map. On the extreme south the plains are high and rough and join a region of very different relief.

Scene in the Adirondacks.

At their eastern end the lake plains unite with the level but narrow valley of the Mohawk River, and this at its eastern end with the valley of the Hudson River. These two river valleys, with the lake plains, furnish a most convenient route from the ocean into western New York, and give easy admission to the western part of our country.

East of the lowlands which border Lake Ontario and the St. Lawrence River, west of Lake Champlain, and north of the Mohawk valley, is a region of mountains. Find it on the map. These are the Adirondack Mountains, the highest in the state.

The foothills are low, but near the center the ranges are high and there are many peaks. The summit of one of these peaks, Mt. Marcy, reaches to a little over one mile above the level of the sea. No other peak in the state is so high. The peak is especially beautiful in winter when covered with snow. The mountain ridges are short and are frequently broken by cross valleys.

Throughout the region there are many beautiful lakes, in whose clear depths are mirrored the wooded slopes of the mountains

Vineyard on Lake Plains, Chautauqua County.

which close them in. Most of these lakes occupy basins formed by the action of a great thick sheet of ice which ages ago spread over the state (page ix).

South of the lake plains and the Mohawk valley, and west of the Hudson valley, is another region of highland, which reaches almost

Cayuga Lake, as seen from Cornell University.

to the shores of Lake Erie. Find it on your map. It is a part of the great Allegheny plateau, which extends southwest through several states. The eastern edge of this plateau, which borders upon the Hudson River, has received the name of the Catskill Mountains, and seen from the river valley the region appears truly mountainous. The surface of the plateau is rough, being deeply scarred by the many stream valleys which are cut into it.

Bordering the larger streams throughout this plateau region there are narrow plains. On these plains roads and railroads with easy grades have been built, by which almost any part of the plateau may be reached. In some cases the headwaters of neighboring streams lie so close to each other that the valley of one opens into the valley of the other, and an easy grade across the plateau from the ocean on the southeast to the lake plains on the northwest is thus marked out by nature. Find such a route on your map.

Among the most interesting of the valleys which reach back into the interior of the plateau from the lake plains on the north are those now partly occupied by the so-called Finger Lakes in the central part of the state. These valleys and their drainage were much changed by the great ice sheet, with the result that we have here some very lovely scenery.

That part of New York state which lies east of the Hudson River and the Adirondack Mountains is very hilly, but with less elevation than the land to the west of the Hudson.

The chief relief feature of Long Island is a well-marked ridge which runs through the center of the island from end to end. This is a small part of the mass of rock and earth which was piled up in front of the great ice sheet, and which is called a terminal moraine. On the north shore of the island there are some prominent bluffs, but the south shore is marked by long, smooth, sandy beaches.

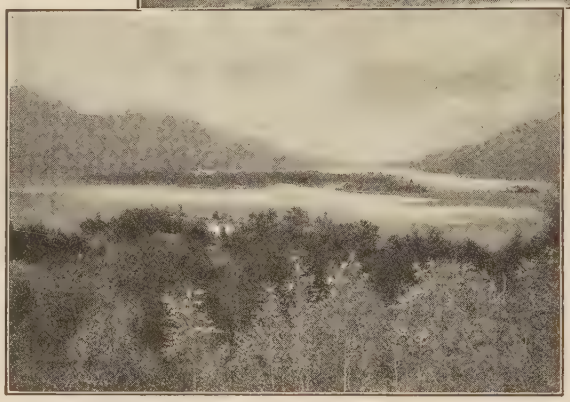
Rockaway Beach, Long Island.

Staten Island has a hilly surface, especially in the northern part.

Of very great importance, not because of its size but because old New York city, now called the Borough of Manhattan, has been built upon it, is the island of Manhattan. In the building of the city small hills and valleys have been nearly leveled. The surface of the island is low at its southern end and on the greater part of the eastern side, while it is high at the north and on the western side. The most important elevations are at Washington Heights and Morningside Heights, the former

being more than 200 feet high, the latter nearly the same. Across the Hudson River are the Palisades, most of which are in the state of New Jersey.

NIAGARA FALLS (New York side).



LAKE GEORGE.

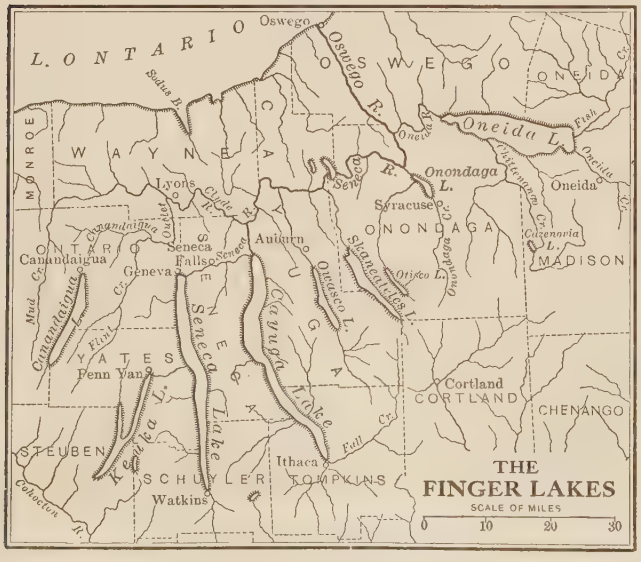
DRAINAGE

The streams of New York state all fall finally into the Gulf of St. Lawrence, the Atlantic Ocean, and the Gulf of Mexico, reaching these widely separated points by means of such main streams as the St. Lawrence, the Mohawk-Hudson, the Delaware, the Susquehanna, and the Ohio-Mississippi. Those parts of the several systems which are included in New York state are described below.

The St. Lawrence system includes much of the drainage from the eastern, northern, and western slopes of the Adirondacks, and from the streams tributary to Lakes Ontario and Erie.

The drainage of the eastern Adirondacks finds its way into Lake George and Lake Champlain through several short, rapid streams which furnish much power and serve as outlets for many of the beautiful lakes in this part of the mountains.

The streams which drain the northern and western slopes also furnish outlets for many of the mountain lakes. Though usually much longer than the streams on the eastern slope of the mountains, they fall rapidly and develop a great deal of power. One of the most important of these is the Black River. Find it on the map.



The waters of the Finger Lake district reach Lake Ontario through the Oswego River, a stream formed by the junction of the Oneida and Seneca rivers. Locate the Finger Lakes and learn the names of the four largest on this map.

West of the Oswego there is but one important stream, other than the Niagara River, which pours its waters into Lake Ontario. This river, the *Genesee*, rises in northern Pennsylvania and flows across the entire state from south to north. In some places it flows through deep gorges, and foams and tumbles over rapids and falls. In other places the valley is broad and open, and the stream quiet and

peaceful. The most important falls are near Mt. Morris and at Rochester.

The Allegheny River, which drains a small part of the southwestern corner of the state, belongs to the Mississippi system, and the waters which it gathers are finally poured into the Gulf of Mexico. Find this river on the map of United States, and trace the course which the waters take to the Gulf.

Little Falls, on the Mohawk.

Falls on the Genesee, at Rochester.

The Hudson River system. The drainage from the southeastern part of the Adirondacks is received in the upper course of the Hudson, and the river takes its rise there. These streams are all interrupted by falls or rapids, and furnish abundant power. The chief tributary of the Hudson, the Mohawk, is interrupted by falls at Cohoes and Little Falls. It flows for the greater part through a beautiful but narrow valley which has formed a natural trade route since the country was first settled. The Mohawk receives its largest and most important branches from the north. These drain the southern Adirondacks. The Hudson River is a tidal stream and is navigable for large steamers as far as Troy.

The Delaware system drains the western slopes of the Catskills and has numerous tributaries, all of which are comparatively small and unimportant. Here again we find falls and rapids to furnish water power, but the whole region is much cut up by the streams, the country is rough, and the slopes wooded.

The Susquehanna system drains much of that part of the Allegheny plateau which is included within the borders of New York state. Both the main stream and its important tributaries penetrate far into the plateau, and their valleys are natural routes of travel. Its most important tributaries are the Chenango and Unadilla on the east, and the Chemung on the west. Find these rivers on your maps and trace their courses.

Deep rivers like the Hudson, and large bodies of still water like the Great Lakes, Lake Champlain, and the Finger Lakes, may be navigated and used for the transportation of goods and passengers. Falls and rapids like those at Niagara, Rochester, Cohoes, and Little Falls, furnish power for the development of manufactures. Open valleys furnish natural trade routes. Many springs furnish mineral waters which are commercially valuable, while others, and at times whole streams, are dammed and their waters collected into reservoirs, from which the water is conducted in underground pipes for longer or shorter distances to villages or cities

A Hudson Steamer. Palisades in the Background.

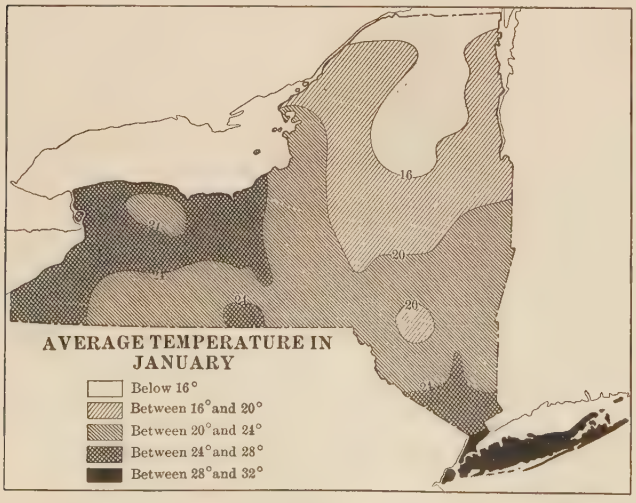
which need it for drinking, fire protection, and other purposes. New York city has already spent many millions of dollars to secure a pure and abundant water supply, and must spend much more before it gets all that it needs. Other cities and villages throughout the state have also spent large sums of money to secure a supply of pure water.

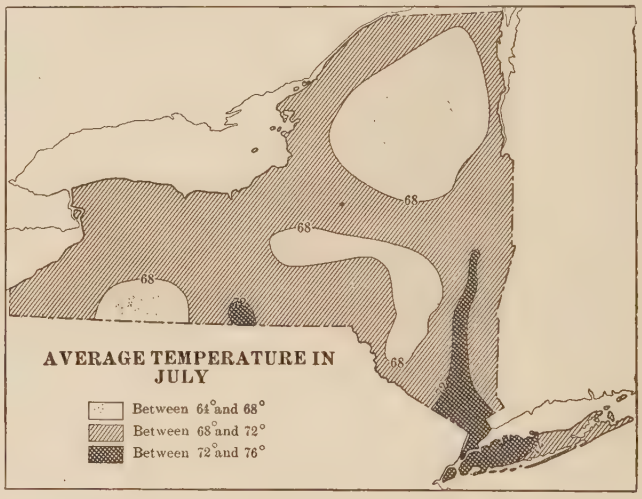
CROTON LAKE, PART OF NEW YORK CITY'S WATER SUPPLY.

Streams and lakes do not, however, remain the same throughout the year. In the spring they contain more and in the fall less water. In the winter they are often covered with ice. Much ice is cut and stored for use in summer.

CLIMATE AND SOILS

Climate. The location of New York state in the north temperate zone is such as to give it marked changes in temperature from summer to winter. This is true in spite of its nearness to the ocean. The prevailing winds are from the west, and the tempering influence of ocean breezes is not much felt. These charts show average temperatures in January and in July. The January temperatures are low in the elevated regions: in the Adirondacks 15°, in the Catskills less than 20°. Over the lake plains, especially near the shores of the lakes, along the Hudson valley, and near the ocean in and around New York city, the average winter temperature is much higher. So also with the July temperature. It is low in the Adirondacks and Catskills, higher in the lowlands, and reaches in and around New York city an average above 72°.





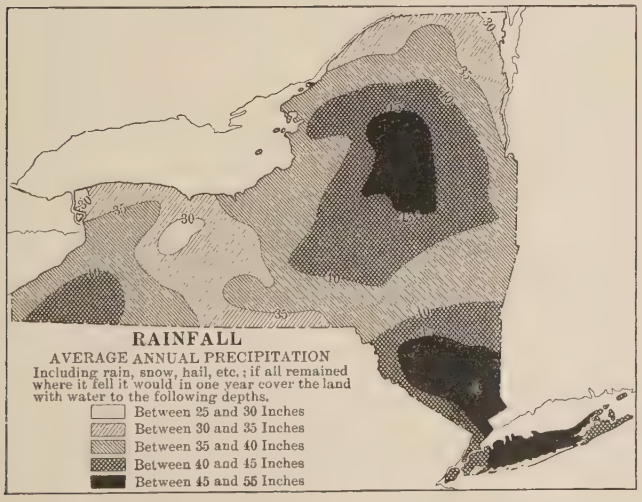
In no part of the state is the rainfall excessive. It is heaviest on the windward slopes of the highlands, around New York city, and over Long Island. It is much less over the lake plains and to the leeward of the Adirondacks. In all parts of the state, however, it is usually ample for the successful cultivation of crops. The chart on the opposite page shows the distribution of the mean annual rainfall over the state. Turn to the table of temperature and rainfall, page xxvii and locate the stations on the charts here. Give the reasons for the differences in temperature and rainfall which you find.

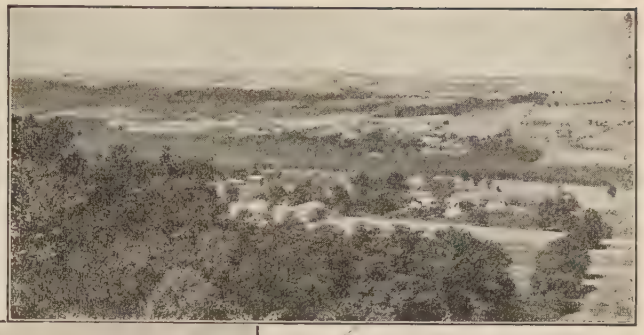
The climate of New York state, in common with that of the greater part of northern North America, was at one time very much colder. The consequences of this were so great that it is worth while to study them.

The Continental Glacier and the Soils. You have learned about the glaciers in Alaska and elsewhere. Many years ago a great continuous glacier covered with ice all the state of New York except a small corner in the southwest. In its slow forward movement from the north, the ice brought rocks and earth material from without the borders of the state and disturbed and redistributed the soils within its borders. It wore down hills and mountains, partly filled valleys, stripped the rock bare in some places, and in others covered it to great depths with stones, gravel, and soil.

Drumlin, Wayne County.

When the ice sheet finally melted, and the streams once more took possession of the land, the old courses were modified or destroyed. In some there were local deposits which divided the channel into basins which were filled as lakes. In others the channels were entirely filled. Nearly everywhere deposits of one kind or another were left.


RAINFALL
AVERAGE ANNUAL PRECIPITATION
Including rain, snow, hail, etc.; if all remained where it fell it would in one year cover the land with water to the following depths.
Between 25 and 30 Inches
Between 30 and 35 Inches
Between 35 and 40 Inches
Between 40 and 45 Inches
Between 45 and 55 Inches



Upland Farm Region.

Much of the soil of New York state is therefore not due to the gradual crumbling of the rock underneath, but is glacial in origin. The soils of the uplands are usually thin, stony clays. They are cultivated with difficulty, and ordinarily yield poor returns.

Where the surface of the ground was such that water could gather into ponds and lakes, as in front of the melting ice, or in old drainage channels, fine silts were often deposited and sorted over by the action of the waves. In stream valleys there are gravels, sands, and clays, the coarsest materials being first deposited, the fine clays settling in the still waters of coves and bays. Fine soils deposited by water, called *alluvial* soils, are very fertile.

In some of the southern counties there are unassorted collections of rock fragments, waterworn bowlders, sands, and clays called *moraines*, which indicate a temporary halting place of the ice front. In other parts of the state, as in the lake plains, the glaciers built up long, narrow, cigar-shaped hills called *drumlins*. Over still other large areas huge bowlders are scattered in the wildest confusion. Little of the soil is, however, absolutely unfertile.

LUMBERING AND AGRICULTURE

Distribution of Vegetation. Very little of the forest which covered the state three hun-

ADIRONDACK FORESTS (Saranac Lake).

dred years ago is now standing. The spread of settlement and the clearing of farm lands doomed most of it to destruction. Only the wood lots of the farmers, the forests of the Adirondacks and Catskills, and the heavy growth of timber through much of the Allegheny plateau remain to show us what it once was. Even the two larger timber tracts remaining were threatened with destruction until the state purchased the land. This action was taken in order to protect the streams from the serious floods which would have otherwise occurred when the winter snows melted in the spring.

Of the softer woods, white pine, spruce, and hemlock are most abundant, and of the hard woods, hickory, oak, the sugar maple, beech, ash, and chestnut. Some lumbering is still done in many parts of the state, and much wood pulp is made. This pulp is used in the manufacture of paper, and the demand for it has led to the destruction of a great deal of timber.

POTATO FIELD, LONG ISLAND.

Agriculture. The farms of the state yield many different products, the kind of farming being determined in a large measure by natural influences already discussed, and to a smaller degree by the demands of large neighboring city populations.

This is especially true near that dense mass of people gathered around the mouth of the Hudson River, in New York city. Much of Long Island, especially the western part, is one vast truck garden. Here all sorts of vegetables and fruits are raised for the hungry people of the city. The long summer, equable temperature, and abundant rain make this an ideal truck-raising region. Similar regions are found around all of our large cities.

Closely associated with the truck-raising industry is that of canning. By means of this industry vegetables and fruits are preserved for winter use.

The thin soil of the uplands, their uneven surface, and their low temperatures combine to make the cultivation of the soil unprofitable in competition with the rich and easily worked soils of the states farther west. These upland regions are, however, favored by an abundant rainfall and furnish excellent pasturage. In consequence, among the western foothills of the Adirondacks and throughout central, southern, and eastern New York the dairying industry has reached a very great

TRUCK GARDEN, LONG ISLAND.

development. This is due also to the demand of the cities for the various dairy products.

Dairy, Westchester County.

Every important valley is reached by a railroad, where the milk, brought daily by wagon from an area of many square miles, is collected at milk stations along the route for shipment, and milk trains run daily from remote country districts into the cities with the output of thousands of dairies.

Bottling Milk, Orange County.

Loading a Milk Train, Guilford, Chenango County.

Only a part of the milk is carried to the cities in its natural state, and milk that is so shipped is now handled with the greatest care to keep it pure. Scattered through the dairying districts which are distant from the cities are numerous butter and cheese and condensed milk factories. The total daily output of these is very large indeed. These products may be held for a longer time before shipping, and with less danger of spoiling.

On the lake plains, especially along the shores of Lake Erie, Lake Ontario, and the Finger Lakes, and in the Hudson valley, the chief farming industry is the raising of fruits.

The district along the Lake Erie shore, including much of Chautauqua and Erie counties, has been made famous by the Chautauqua grape, and its cultivation is the most important agricultural industry carried on in that part of the state (picture, p. iv).

Along the Lake Ontario shore is a famous peach belt, and in the same district but somewhat farther inland are many wonderful apple orchards. In this region, which includes the counties of Niagara, Orleans, Monroe, Wayne, and Genesee, and parts of several others, many cherry trees and other small fruits are raised, and truck raising and canning have greatly developed in recent years.

Around the Finger Lakes, in Steuben, Schuyler, Yates, Ontario, Seneca, and Cayuga counties, are vineyards almost as famous as those of the Chautauqua Lake district, and around the eastern end of Lake Ontario and along the St. Lawrence River, as well as in the Hudson valley, there are also many splendid apple orchards.

Hop raising was once an important industry in central New York, as was also wheat raising in the Genesee valley. Both of these have suffered serious decline in recent years, chiefly because the industries are more profit-

Apple Orchard, Monroe County.

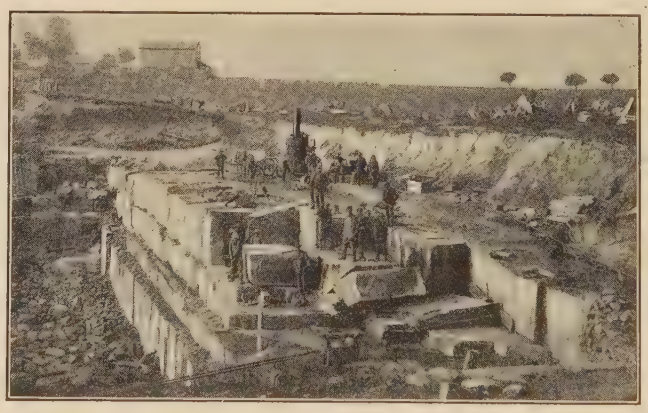
able in the western part of our country, where the land is more easily worked.

Diversified agriculture, as the raising of many different products on each farm is called, is now but little known in New York state, except in remote country districts. Even there the building of good roads and the extension of railroads and trolley lines are working great changes. New York is rapidly becoming a state of specialized agricultural industries, each farm producing some one product for which it is best fitted. The State College of Agriculture at Ithaca has done much to help bring out the full possibilities of our farms.

Closely associated with the agricultural industry is the raising of poultry and sheep, in which our state takes high rank.

HUNTING, FISHING, AND MINING

Distribution of Animal Life. In New York state as elsewhere the wild animals have shared the fate of the forests. In a large measure their fate was bound up with that of the forests, and with the clearing off of the timber they withdrew farther and farther from the homes of civilized men. Even the protection afforded by the forests and timber tracts still standing was insufficient until very stringent laws were passed. As a consequence hunting as an industry has now almost ceased to exist outside of the Adirondacks and Catskills, and even there it furnishes a poor existence to those who follow it for a living.



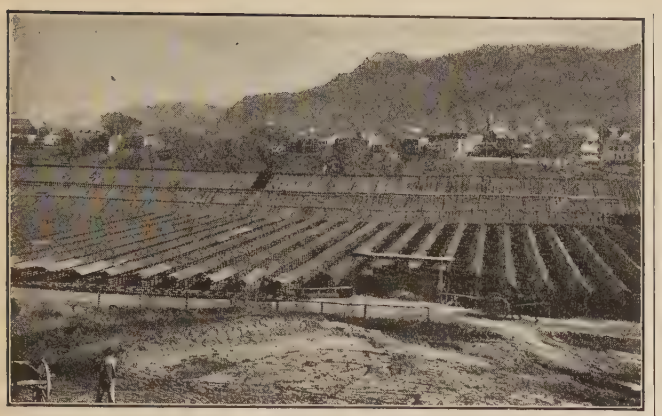
Sandstone Quarry, Albion, Orleans County.

The laws governing the shooting of game are now so strict, and the state reservations so large, that there is some hope that the beautiful and graceful creatures of the woods will not vanish altogether from their native haunts. In the Adirondacks moose and deer are still found, and black bears are not uncommon.

Not only were the larger animals of the forest hunted and trapped, but the waterfowl and game birds of the marshes and the fish in stream and lake were largely killed off before laws were passed for their protection.

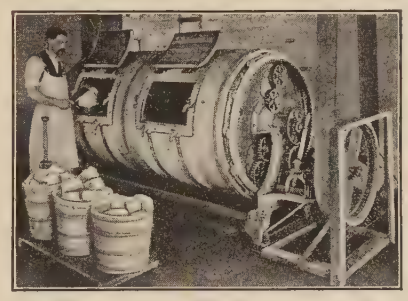
Along the shores of Long Island bluefish and mackerel are still taken in great quantities and the oyster industry has become especially profitable. Fishing in the Great Lakes is not so important as it once was, although it is still carried on and furnishes employment to many. Commercial fishing is also carried on to a considerable extent in the Hudson River, where great quantities of shad are taken.

Mineral Wealth. Aside from its fertile soils, which must be ranked as its mineral possession of greatest importance, New York state has other mineral resources of great value. Its building stones include sandstone, limestone, granite, flagstones, slate, and others, and are quarried in many places through the state. Of the sandstones, the Medina of western, and the Potsdam of northern New York are most important. Limestone is quarried at several points along the outcropping limestone ridge which runs east from Niagara Falls through Lockport, especially about Niagara Falls and at Lockport. It is also quarried along the Hudson and in the Black River region. Granite is obtained in the Hudson River highlands and in the southern and eastern part of the Adirondacks, flag-stones in Ulster and Chenango counties, and roofing slate in Washington county.



BRICK YARD, HAVERSTRAW.

The manufacture of cement is constantly increasing in importance. It is being very extensively used in modern building operations of all sorts because of the ease with which it may be handled and molded into desirable forms, because of its fireproof qualities, and because some kinds will set in water. On the whole it is a cheaper building material to handle than stone, and it is often possible to use it where it would be impossible to use stone. It is manufactured from various materials and at many different points in the state, as at Akron, Buffalo, near Syracuse, near Kingston, and at many places in the Hudson valley.



CHURN IN EAST AURORA CREAMERY.

Clay deposits in larger or smaller amounts are found in nearly all parts of the state. The thickest and for many reasons the most important beds are found along the Hudson. The clay deposits are chiefly used in the manufacture of brick. Those engaged in the industry on the Hudson River find a ready market in New York city, to which the bricks may be easily and cheaply carried.

Rock salt beds are among the state's mineral resources, and New York now ranks first among the states in the volume of its salt production. Salt works are located near Syracuse, Ithaca, and in the Genesee valley.

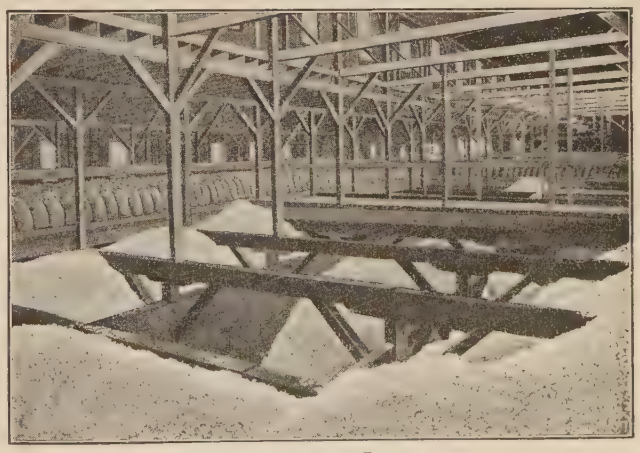
Gypsum, used chiefly as a fertilizer, is quarried in a few of the counties in the central and western part of the state.

The chief petroleum-producing district of the state is in the southwestern part in Allegany and Cattaraugus counties, and is a part of the greater district, much of which lies within the borders of the state of Pennsylvania. The yearly output is large, and many of the original wells are still flowing. In this same region and in Erie county, as well as in several other places in the state, there are natural gas wells which have been used to furnish heat and light for private dwellings and manufacturing establishments.

Some graphite is mined in the vicinity of Lake George, and much iron in the Lake Champlain region and at several other points in the state. Recent developments lead to the belief that the iron ores of the state may ultimately prove to have a very considerable value.

MANUFACTURES

Attention has already been called in several instances to manufacturing industries which are closely connected with the production or handling of certain raw materials. These include the manufacture of butter



SALT READY FOR SHIPMENT.

and cheese in the dairying districts, the development of canning in the truck-raising sections, and the activities of the wood pulp and paper mills in the Adirondack region. These, however, are only a few and not the most important of the manufacturing industries carried on in the state.

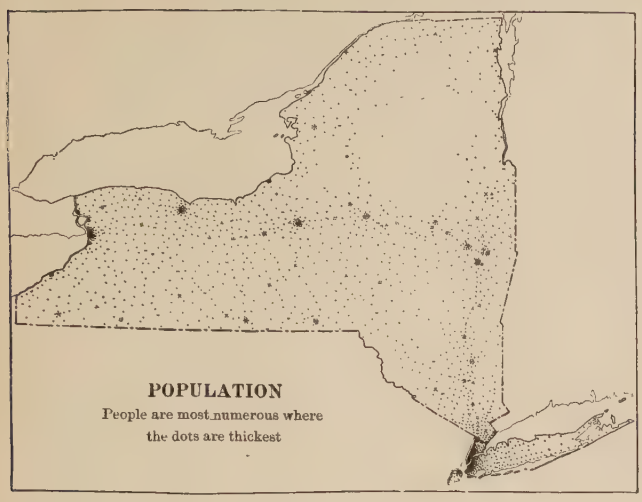
Erie Canal in the Mohawk Valley.

New York really possesses to a remarkable degree the conditions favorable to the development of manufactures. Its falls and rapids, its oil and gas fields, and the nearness to the coal mines of Pennsylvania give it abundant power. By way of the Great Lakes, the enlarged Erie or Barge Canal, and the many railroads which cross its lake plains and follow its open river valleys, the products of the West may be brought to its cities for manufacture. The manufactured products may then be concentrated at New York city, either to be shipped to foreign markets or to be distributed throughout the vast extent of our own country. Its splendid harbor at the mouth of the Hudson is large, deep, and easy of access, and to this port raw materials from all over the world are brought in exchange for our manufactured goods. These and other conditions have made New York the first manufacturing state of the Union.

It is impossible to name all the manufacturing industries carried on in the state, but some of the more important ought to be mentioned. In the list of food manufactures we find sugar and molasses, flour and meal, cheese, butter, condensed milk, confectionery, and packed meats. In the list of garments to wear are included clothing for men and women, hosiery and knit goods, silk, cotton, and woolen goods, boots and shoes, gloves and mittens, hats and caps, shirts, and collars and cuffs. Other important industries of New York, in which the state takes first rank, include the printing and publishing trades, the manufacture of electric apparatus and supplies, and the making of furniture and other wood work.

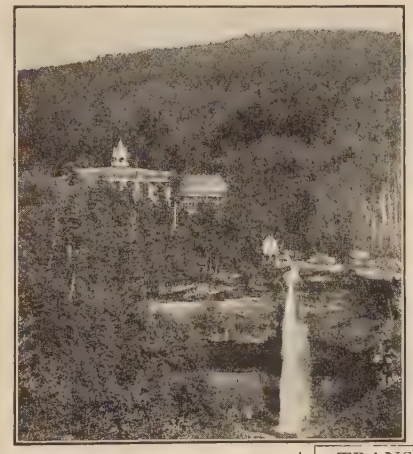
It is of course natural to expect that manufacturing industries will develop at points which are especially favored by nature. Sometimes it is nearness to the raw material which controls, at other times it is the power, or the nearness to market, or the ease and cheapness with which goods may be transported. In consequence there are scattered through the state many cities in which manufacturing is carried on, the extent to which it has developed depending in each instance upon one or more of the controlling conditions mentioned above. None of these, however, approach in importance the city of New York. Here are produced more than half of the manufactures of the state, making an enormous total expressed in volume or value of output.

Upper New York Harbor, seen from Manhattan Island.



DISTRIBUTION OF POPULATION

Whatever may determine the original location of a settlement, the condition which has most to do with its development is the extent to which it affords occupation for people. Greater New York is large because it offers employment in trade, in manufacture, and in commerce to great numbers of people, while permanent settlements in the Adirondacks and Catskills are limited both in number and size because there is little to furnish people profitable employment except in the summer time, when these regions, because of their cool and bracing air, are much frequented by "summer boarders." Agricultural districts have their own peculiar type of settlement, and but few of these in a purely agricultural region will ever grow to be large. Most important cities are found on natural trade routes and are now connected with one another by great transportation systems. The above map shows the regions of dense and sparse population. This should be studied in connection with the map below, showing the railroads, canals, and navigable waters.

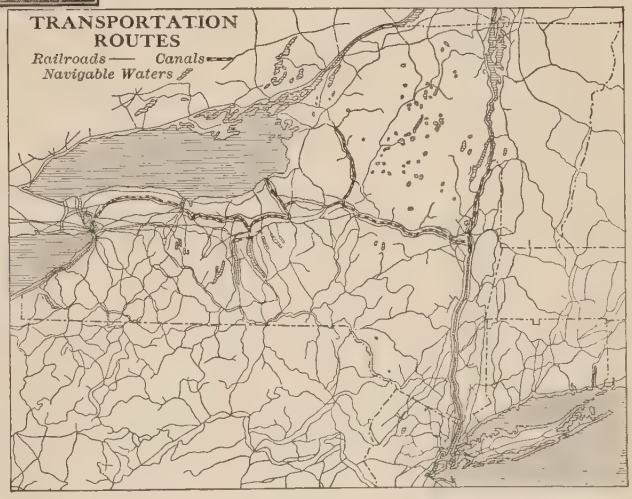


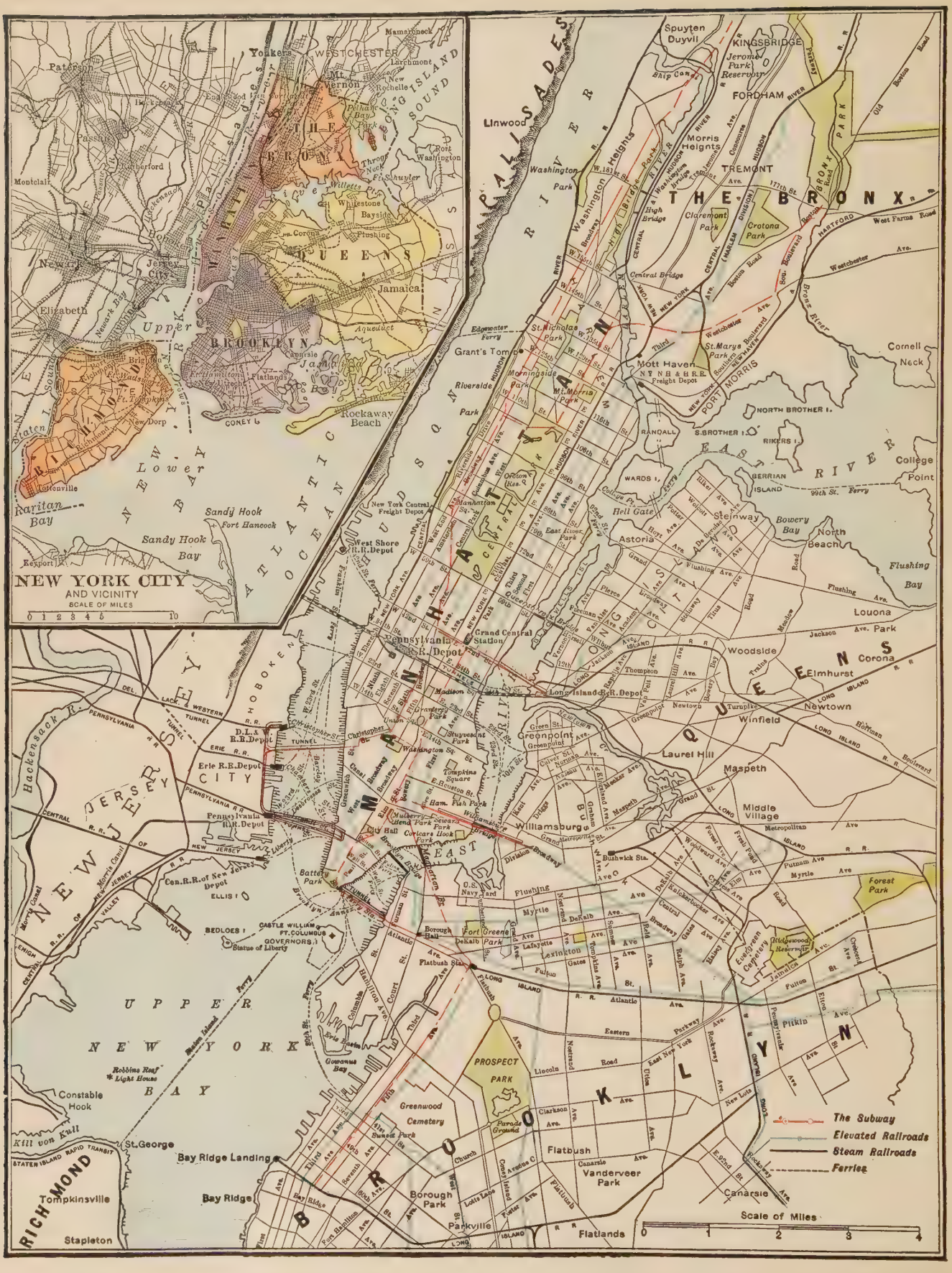
HOTEL IN THE CATSKILLS.

The tables given on pages xxvii, xxviii, furnish much information about the population of the state as a whole and its chief towns and cities, as well as important facts concerning the leading industries. It is not expected that these statistics will be learned, but they should be carefully studied so that intelligent comparisons may be made between the different parts of the state. This sort of study should bring out the reasons for the distribution of the population, the different physical conditions which have influenced the location of settlements, the influences which led to the selection and growth of various industries, and the building of lines of communication and trade.

NEW YORK CITY

The largest and most important center of population in New York state is also the largest and most important center of population in America. This is New York city (page xvi). New York city, or Greater New York, as it is often called, is made up of a group of cities and smaller settlements at the mouth of the Hudson River and on the western end of Long Island. As the cities on the west bank of the




NEW YORK CITY
AND VICINITY
SCALE OF MILES
0 1 2 3 4 5 10
THE BRONX
MANHATTAN
BROOKLYN
QUEENS
RICHMOND
NEW JERSEY
UPPER NEW YORK BAY
LOWER NEW YORK BAY
HUDSON RIVER
EAST RIVER
HARLEM RIVER
NEWARK BAY
ATLANTIC OCEAN
LONG ISLAND SOUND
Yonkers
Mt. Vernon
New Rochelle
Paterson
Passaic
Hackensack
Rutherford
Montclair
Newark
Jersey City
Elizabeth
Perth Amboy
Staten Island
Coney Island
Rockaway Beach
Jamaica
Flushing
Whitestone
Throgs Neck
Fort Schuyler
Fort Washington
Spuyten Duyvil
Kingsbridge
Jerome Park Reservoir
Fordham
Morris Heights
Tremont
Linwood
Washington Heights
Washington Park
Claremont Park
Crotona Park
Bronx Park
Grant's Tomb
Riverside Park
Morningside Park
Mt. Morris Park
St. Nicholas Park
St. Mary's Park
Mott Haven
Port Morris
Cornell Neck
North Brother I.
South Brother I.
Rikers I.
College Point
Berrian Island
Hell Gate
Astoria
Steinway
Bowery Bay
North Beach
Flushing Bay
Louona
Woodside
Corona
Elmhurst
Newtown
Winfield
Laurel Hill
Maspeth
Middle Village
Williamsburg
Greenpoint
Long Island City
Pennsylvania R.R. Depot
Grand Central Station
West Shore R.R. Depot
New York Central Freight Depot
Erie R.R. Depot
D.L. & W. R.R. Depot
Con. R.R. of New Jersey Depot
Battery Park
Ellis I.
Bedloe's I.
Castle William
Ft. Columbus
Governors I.
Statue of Liberty
Robbins Reef Light House
Constable Hook
Kill von Kull
St. George
Bay Ridge Landing
Bay Ridge
Tompkinsville
Stapleton
Staten Island Rapid Transit
Borough Hall
Fort Greene
Flatbush
Vanderveer Park
Canarsie
Parkville
Flatlands
Borough Park
Greenwood Cemetery
Prospect Park
Navy Yard
Sandy Hook
Fort Hancock
Sandy Hook Bay
Raritan Bay
Perth Amboy
Keyport
Tottenville
The Subway
Elevated Railroads
Steam Railroads
Ferries
Scale of Miles
0 1 2 3 4

LOWER END OF MANHATTAN ISLAND, NEW YORK CITY.

Hudson at this point are in the state of New Jersey, they cannot be considered as forming a part of Greater New York, although they owe their origin and growth to the same splendid commercial and manufacturing facilities which have brought about the growth of their great neighbor across the river.

The population within the city limits of Greater New York reached in 1915 the enormous total of 5,047,221. The city now includes five parts, or boroughs: 1. The island of Manhattan, called the Borough of Manhattan, which for many years included the whole of New York city. 2. The Borough of Brooklyn, including the former city of that name. 3. The Borough of Queens, in which we find Long Island City, Jamaica, and many smaller places. 4. Staten Island, called the Borough of Richmond. 5. The region to the north, known as the Borough of the Bronx. This borough is separated from Manhattan Island by the Harlem River and Spuyten Duyvil Creek. Locate on your map these five boroughs and trace their boundaries.

New York harbor, upon which this great city is located, is one of the largest and finest in the world. The lower bay has an area of about 88 square miles, and the upper bay an area of about 30 square miles. Its waters are crowded with ships night and day. Along the East River and for several miles up the Hudson great docks have been built and enormous piers jut out from the shore. Here are loaded and unloaded ships which bear passengers and goods to and from all

STREET FRONT OF NORTH RIVER PIERS.

Sailing Ships at Piers on East River.

the great ports of the world. Similar docks and piers line the opposite New Jersey shore. In recent years the great ocean liners have been increased in size until they have now become so large that new and larger piers must be built to accommodate them.

In addition to the ocean-going steamers which dock at this city there are several lines of coastwise, river, and sound steamers which ply between this and other ports. In the morning ferry boats carry from New Jersey and Long Island crowds of passengers to their business in Manhattan, and they are again crowded by the returning throng at the close of the business day.

Railroads. In order to understand the importance of Greater New York as a commercial and industrial city it is necessary to take careful note of its railroad connections with other parts of our country. Trace on your map the lines which enter the city.

One of these important lines, the New York Central Railroad, reaches the interior of the state and the West through the Hudson and Mohawk River valleys and across the lake plains. This route is without heavy grades, and to this advantage it owes a large part of its rapid growth in past years. Passenger trains enter the city by a swing bridge across the Harlem and follow Park Avenue by elevated and underground tracks to the Grand Central Station on Forty-second Street. (See map.) Freight trains, however, follow the Hudson to some one of several freight yards along the river front.

The New York, New Haven, and Hartford lines also reach the Forty-second Street terminal over the New York Central tracks. This road is one of the most important in the New England states and makes communication and trade with that region very easy.

The Pennsylvania system now enters New York through great concrete-lined steel tubes which pass under the Hudson River. Tunnels have also been built under New York and under the East River and connect Long Island City and the whole of Long Island reached by the Long Island Railroad with the great Pennsylvania depot on Seventh Avenue between Thirty-first and Thirty-third streets. Locate this on your map. By means of the Pennsylvania system and its connecting lines another great part of our country is brought into easy touch with New York and the world's markets.

Pennsylvania Railroad Depot.

In addition to the railroad lines which actually enter the city there are many from the south, west, and northwest which have their terminals on the New Jersey side of the river. Several of these roads reach the west across the Allegheny plateau through the river valleys of southern New York state. In this way the people of those portions of our state not reached by the New York Central lines

are brought into communication with the New York city markets.

On Manhattan Island the wholesale business district is in the southern part and along the wharves. The retail district is farther uptown, and the residential is still farther north. This has made necessary an enormous amount of traveling by business people and shoppers. It has been very difficult to take care of this travel because of the way in which the city was first laid out.

A Downtown Side Street.

When New York city was first settled the chief movement of people and trade was across the southern part of the island from river to river. This resulted in the laying out of many east and west streets. At that time, however, the northern part of the island was farming country, and so but few north and south lines of travel were necessary. As the city grew this mistake was not corrected, so now, in order

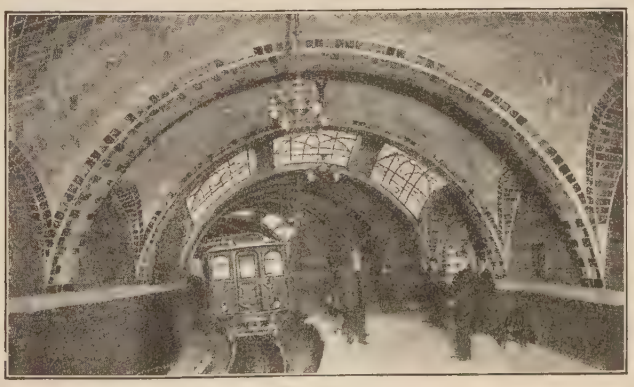
Elevated Railroad.

to accommodate the great numbers who are compelled to use these few north and south avenues, especially during the early morning and late afternoon hours, many surface car lines, a number of elevated railways, and a system of subways have been built. All of these are crowded to the limit of their capacity during the morning and late afternoon hours.

It must also be remembered that vast numbers who do business in the city are carried daily on the suburban trains of the railroads which enter the city or which may be reached by ferries or under-river tunnel connections. Passengers are thus able to reach the smaller villages and country districts on Long Island and for many miles up the Hudson, in southwestern Connecticut, and in eastern and northern New Jersey.

In addition to the numerous ferry boats and the tunnels of the Pennsylvania and Long Island Railroad lines, other independent tunnels have been built. One system under the Hudson connects the railroad terminals on the New Jersey shore with the wholesale and retail business districts on Manhattan Island. Other tunnels under the East River are a part of the subway system. Four great bridges now connect the western end of Long Island with Manhattan and furnish accommodations for surface cars and foot passengers.

On Manhattan Island itself the congestion of population has led, in both the business and the residential districts, to the erection of buildings which will take care of many people.



Subway.

THE WOOLWORTH BUILDING.

In the business district this has been done by erecting stores and office buildings of great height. One of the tallest of these down-town office buildings has fifty-seven stories, and accommodates thousands of workers.

In the residential section of the city the private house with its own yard is now almost unknown. Indeed, the number of single houses in the most exclusive residential district is rapidly decreasing. Great apartment houses, many stories in height, have taken their place. In these the rooms are usually so arranged that each family has all of its rooms on the same floor and connected with one another. In the better class of such buildings there are elevators to carry people to and from the various floors. On the lower east side, and in other parts of the city where the poorer people live, the homes are often in a few small, poorly lighted and ventilated rooms, with many families crowded into a space none too large for one. This is the tenement district.

A STREET OF TENEMENT HOUSES.

Manufactures. In the value of its manufactures Greater New York outranks all but two of the states in the Union. In the order of their importance the six principal industries are the manufacture of clothing, the printing and publishing trades, sugar and molasses refining, slaughtering and meat packing, tobacco manufacturing, and the making of bread and other bakery products.

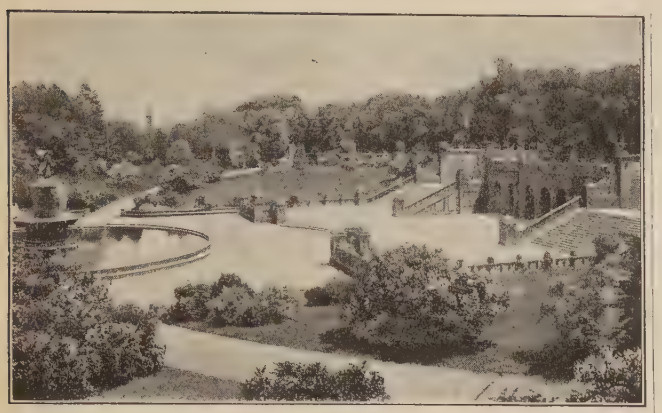
In the manufacture of clothing this city takes very high rank, its output being half that of the whole country. This one industry makes up one fifth of the city's manufacturing. Most of the work is carried on in small shops. There are very few factories.

In olden days the center of the printing and publishing trades was in "Newspaper Row," near City Hall Square. In recent years several of the great newspapers have moved farther uptown, and the book-publishing business has also been scattered.

The center of the sugar and molasses refining is in Brooklyn. This industry has grown up on the waterfront, where the boats may be readily loaded and unloaded.

Parks. It has already been pointed out that many people do business in the city who do not live within its boundaries. Many of these live far enough out in the country to have plenty of fresh air and sunshine and often grassy lawns around their homes. In the city the land is so valuable that most of it has been built upon. There are but few lawns, and in order that the people may have fresh air

APARTMENT HOUSES, RIVERSIDE DRIVE.



IN CENTRAL PARK, NEW YORK.

and exercise several large parks and public playgrounds have been set aside. Walks and drives have been constructed and ball grounds and tennis courts have been laid out. In many parks permission is given to play on the grass, and nearly every summer day they will be found full of happy children. Among the large parks are the following: Central, Riverside, Bronx, Van Cortlandt, Pelham Bay, Prospect, and Forest. Find these on the map. In addition to the larger parks there are many smaller playgrounds and "squares" scattered through the densely populated parts of the city. These are much used by the people who live near them.

CARPET MILL, YONKERS.

OTHER CITIES OF THE STATE

Of all the highways across the Appalachian region, the one which furnishes the easiest grade from the seacoast to the great plains of the interior is up the Hudson valley to Albany, across the low sand hills to Schenectady, along the Mohawk valley to the lake plains, and across these to the west. Attention has already been called to the great railroad system which makes use of this route. The tracks of the main line follow the valley on the eastern side of the Hudson River as far as Albany, and the "West Shore" tracks follow it for many miles on the western side. East of the Hudson is the Harlem division of the same system. Find these railroads on your map.

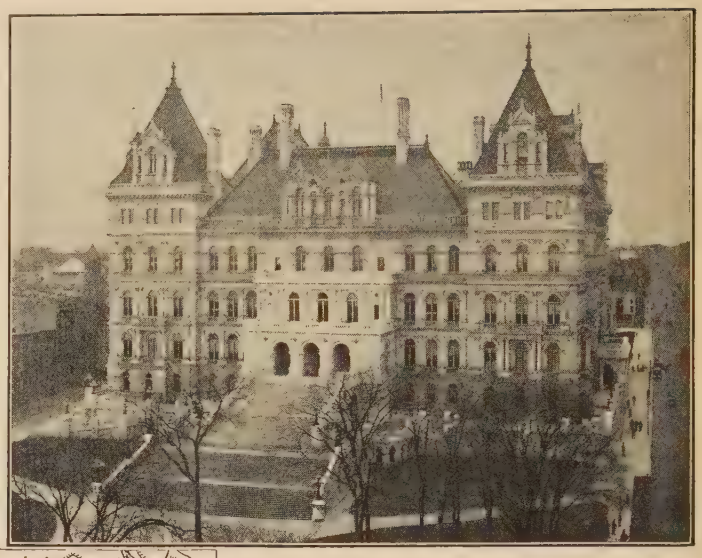
Along all of these routes near New York city many smaller cities and towns have grown up. They are chiefly residential, although manufacturing interests are not lacking.

On the Harlem division there are *Mount Vernon* and *White Plains*. Farther east are *New Rochelle* and *Port Chester*. Up the Hudson valley the first place of importance is *Yonkers*, a large city with great carpet factories and sugar refineries. Farther north and still on the eastern bank are *Tarrytown*, about which Irving wrote in his Legend of Sleepy Hollow; *Ossining*, the seat of one of the state prisons and of important manufactures; and *Peekskill* and *Beacon* also important manufacturing centers. Across the river from a point about midway between Ossining and Peekskill, is *Haverstraw*, where there are valuable clay deposits much used in brick making and similar industries. North of Haverstraw are *West Point*, where the United States Military Academy is located, and *Newburgh*, an important railroad and manufacturing center.

Farther up the river on

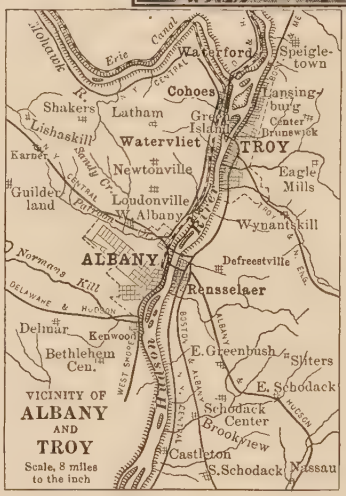
LOOKING UP THE HUDSON FROM WEST POINT.

the east bank is *Poughkeepsie*. At this point the Hudson River is crossed by the only bridge south of Albany. Vassar College, one of America's great colleges for women, is also located here. Across the river and still farther north is *Kingston*, at the mouth of the Wallkill valley. It is an important trade center and deals largely in brick, cement, bluestone, coal, and ice. This is one of the points where tourists find admission by railroads into the summer resorts scattered throughout this part of the plateau. *Hudson*, on the east bank, is important for its manufactures.



THE CAPITOL, ALBANY.

Albany, the capital, is located on the west bank of the Hudson River, on the slopes of a hill which rises steeply from a narrow plain along the river's edge. It is the largest and most important of a group of towns and cities which have grown up where great natural trade routes meet each other. The head of navigation on the Hudson River is only a few miles above it, and during the season of navigation great steamers, carrying both passengers and freight, ply night and day between this city and New York, 145 miles to the south. The New York Barge Canal is being built to replace the old canals connecting the Hudson River with lakes Erie, Ontario, and Champlain. It is to be 12 feet deep, from 94 to 200 feet wide, and will carry barges of 1000 tons. The old Erie Canal was from 6 to 9 feet deep, and carried barges of 250 tons.



Albany is especially important as a railroad center. Trace on the map the railroads which enter the city. The passenger trains of all of these lines enter and depart from the great Union Station. It is this concentration of transportation lines which has made Albany so important a trading center. Its manufacturing interests are also of importance. Among these are its iron, wood, and brass manufactures, and the manufacture of malt liquors, clothing, caps, and knit goods.

COLLAR FACTORY, TROY.

Rensselaer is a manufacturing city across the Hudson from Albany. *Troy*, a large city just a few miles farther up the Hudson, has become famous because of its manufactures of shirts, collars, and cuffs. At *Watervliet* the Erie canal meets the Hudson, and a United States arsenal for the manufacture of great cannon is located here.

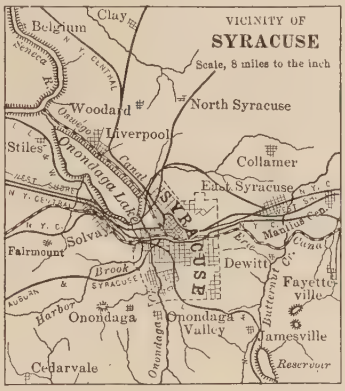
Schenectady, the most rapidly growing city in New York state, is an important industrial center. In the manufacture of electrical machinery and appliances it stands first in the state and ranks with the important electrical centers of the world. Steam and electric locomotives, fire engines, knit goods, and overalls are among its manufactures.

ELECTRICAL WORKS, SCHENECTADY.

Union College is situated in Schenectady. It is an important educational institution, founded in 1795.

Along the central Hudson and especially along the Mohawk valley, in such places as *Hudson*, *Cohoes*, *Mechanicville*, *Amsterdam*, *Little Falls*, *Herkimer*, and *Utica*, the hosiery and knit goods industry has been greatly developed. At *Little Falls* over half of the industries are in this line, at *Cohoes* over one third, at *Amsterdam* about one third, and at *Utica* nearly one fourth. Between *Amsterdam* and *Little Falls*, but a short distance north of the Mohawk, are *Johnstown* and *Gloversville*, the center of the glovemaking industry.

Glens Falls is a manufacturing city located at waterfalls on the upper Hudson. *Saratoga Springs* has become a famous summer resort, deriving its name from its splendid mineral springs.



Utica is 95 miles west and a little north of Albany. It is on the south bank of the Mohawk and on the Erie Canal. It is also an important railroad center. On the map, trace the railroads entering Utica, and notice the parts of the state which must find their outlet through this city. The surrounding region is chiefly devoted to dairying and hop growing.

Utica is the largest city of the region, and has become important because it is so well located to act as a trade center. It manufactures knit goods, steam fittings, heating apparatus, lumber products, and harnesses.

The most important place in the northern part of the state lying between the St. Lawrence River and the Adirondacks is *Watertown*. It is the natural trade center of this region and has its outlet to the south through Utica and Syracuse. It has important paper and pulp manufactures, and the same industries are carried on in many of the smaller places around the base of the Adirondacks. Why? *Ogdensburg* is on the St. Lawrence River at the head of deep water navigation. Through this port considerable trade is carried on with Canada.

West of Utica are the lake plains, within the borders of which are located three of the largest and most important of the cities of the state. Named in their order from east to west, these are *Syracuse*, *Rochester*, and *Buffalo*. Between Utica and Syracuse there are several places of importance, including *Rome* and *Oneida*. Rome, at the junction of the Erie and Black River canals, is in a rich farming section and is noted for its canning factories.

Syracuse lies near the center of the state in the southern margin of the lake plains, and is cradled in by hills. It is at the mouth of the Onondaga Valley, about 35 miles south of Lake Ontario. The Erie Canal passes through the city, and is connected by the Oswego Canal with Lake Ontario. As a result, the city has water connection with all Great Lake points and the St. Lawrence River, and by way of the Hudson with New York. Syracuse is also a great railroad center. Turn to your

GENESEE STREET, UTICA.

railroad map and trace those railroads which center upon the city. They come from many directions and furnish excellent trade facilities. Among the important manufactures of Syracuse are men's clothing, foundry and machine shop products, iron and steel goods, typewriters, and salt. This last named industry, though still of considerable importance, is not so famous as it once was. There has grown out of it, however, the manufacture of soda and soda ash, and this industry, now carried on at *Solvay*, just outside the city limits on the west, employs a great many men.

ROCHESTER CAMERA WORKS.

North of Syracuse are *Fulton* and *Oswego*, an important port of Lake Ontario, famous for its manufacture of starch. West of Syracuse there are two important railroad routes. One of these, the shorter route to Rochester, crosses the great Montezuma swamp, and passes through *Newark* and several smaller places. The longer route passes by the northern ends of the Finger Lakes, and furnishes an outlet east and west for the products of this part of the state. The important places along this route are *Auburn*, at the foot of Owasco Lake, *Seneca Falls*, near Cayuga Lake, *Geneva*, on Seneca Lake, and *Canandaigua*, on Canandaigua Lake. All of these are busy industrial towns, and upon them centers much of the trade of the lake valleys. At the head of Cayuga Lake is *Ithaca*, the seat of Cornell University.

Rochester is third in size among the cities of the state, and it is also a very important manufacturing center. The city is located on both banks of the Genesee River, about seven miles from Lake Ontario, at a point where a series of three waterfalls furnish much water power.

The original location of this city was due in a large measure to the water power which these falls furnish. In the early days of western New York the Genesee valley was a great wheat-growing region, and Rochester was the center for the manufacture of this wheat into flour. Later the great wheat fields of the West were opened up, and the farmers of the Genesee valley and the lake plains gradually turned their attention to other things.

CLINTON SQUARE, SYRACUSE.

Among the agricultural interests which attracted them was the raising of seeds and young fruit and shade trees. Rochester is now the foremost city of the world in the seed business.

At the present time Rochester is chiefly noted for the manufacture of clothing, boots and shoes, cameras, films, and optical instruments. The city is reached by eleven railroads, and a number of important suburban electric lines. The Erie Canal also crosses the Genesee River at this point.

One of the many bridges in the city carries Main Street.

This is a stone bridge, and as it is lined on both sides with stores, the stranger in the city has no idea that a part of the street is built over the river. The port of Rochester is *Charlotte* on Lake Ontario, and through this port considerable commerce is carried on.

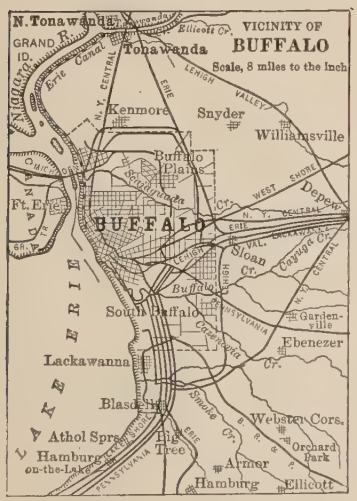
West of Rochester, a branch of the New York Central called the "Falls Road" goes to Niagara Falls, and passes many important towns. Among these may be mentioned *Medina* in the center of the quarrying interests, *Lockport* where the Erie Canal is brought across the Niagara escarpment in a series of locks, and *Niagara Falls*. .

This last named city has grown very rapidly during recent years because of the use of a part of the water power of the great falls. Much of the power so obtained is used to develop electricity, and this in turn is used in factories, to run street cars, and light streets. Wires carry the electricity developed at Niagara across the state as far east as Syracuse. It is used along the route for various industries. It is at or near Niagara Falls that great bridges carry several railroad lines into Canada.

Southeast of Niagara Falls, on the Niagara River, are *Tonawanda* and *North Tonawanda*, a great lumber-trading center. South of the Falls Road is an east and west route followed by the main lines of several railroads. On this route is *Batavia*, with important manufacturing interests and a State School for the Blind.

POWER PLANT, NIAGARA FALLS.

Buffalo, the second city in size in the state, is beautifully located at the eastern end of Lake Erie. In recent years it has grown very rapidly, and the shallow harbor of its early days has been dredged, and great breakwaters constructed by the United States government to form an inner



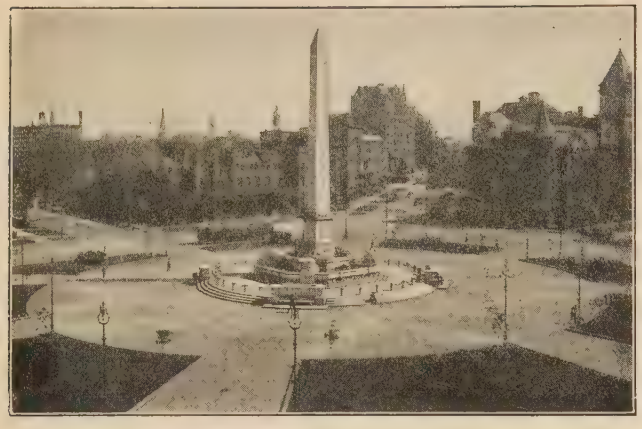
BUFFALO HARBOR.

and an outer harbor. The Erie basin, the terminus of the Erie Canal, was constructed by the state, and the city has dredged Buffalo Creek, and constructed a ship canal in order to provide sufficient wharfage.

All of this has been made necessary because of the enormous trade of this port. It is the eastern terminus of many lake steamship lines, and is frequented by hundreds of independent vessels. Communication with Canada is by ferry and the international bridge. Buffalo is connected through the Erie Canal and the Hudson River with the port of New York, and with cities along Lake Ontario through the Welland Canal.

Many important railroads enter the city. Trace them on your map. The suburban trolley service is also important and extensive.

Through this port immense quantities of grain and flour pass on their way from the fields and mills of the West to the Eastern markets. To handle this grain quickly, great elevators have been built along the wharves to suck it from the holds of the ships, and later drop it into the long freight trains which are to carry it east. Much live stock, and quantities of coal, iron, and fish are also marketed here. Buffalo's horse and sheep market is the largest



NIAGARA SQUARE, BUFFALO.

in the United States. Among the important manufactures are ironwork and machinery, packed meats, petroleum products, ships, clothing, flour and grist mill products.

Adjoining Buffalo on the south is *Lackawanna*, with large railroad shops.

The great trade route, which we have followed from New York city to Buffalo, is the most important one in the state. Other important routes, however, are marked by the railway lines which penetrate the plateau section of the state. Usually these lines follow the river valleys which have already been described.

In the eastern portion of this plateau section is a region of summer resorts and upland dairy farms.

Most of the settlements are small. *Oneonta*, the home of one of the state normal schools, and *Norwich* are centers for large dairying interests. In what river valleys are these places located?

Middletown, *Port Jervis*, *Binghamton*, *Elmira*, *Corning*, *Hornell*, *Olean*, *Salamanca*, and *Jamestown* are important places in the southern part of the state. On what river is Binghamton? Port Jervis? Salamanca? Each of the other places named is on a smaller stream; in what large stream basin is each? Through these places the Erie, Lehigh, Lackawanna, and other railroad lines pass, connecting them with the east and west and oftentimes with the country to the north and south. Each is a railroad center and really owes its growth and present importance to its position on natural trade routes.

To the north of Jamestown is *Dunkirk*, on Lake Erie, with large railroad shops; and to the west, near by, is Chautauqua Lake, where a great summer resort famous for its summer schools and educational meetings has been developed. Not far north of Binghamton is *Cortland*, the home of a state normal school, and an important manufacturing center.

Plattsburg, the only city of importance in northeastern New York, is picturesquely located on Lake Champlain. It also is the seat of a state normal school.

This brief description of the distribution of the population of the state must not be concluded without reference to the summer residents at various resorts, especially on the southern shore of Long Island. Mention has already been made of the summer use of the Catskill and Adirondack Mountains. All three of these regions are popular summer resorts, the first because of the cool ocean breezes, the other two because the elevation gives cool, pure, and bracing air, and, in the Adirondacks especially, because of the quiet and privacy of the woods.

HISTORY

The early history of New York state is very interesting, but only a brief sketch will be attempted here. The student of geography is chiefly concerned with the part of history which records the influence of physical features in shaping exploration and settlement. It is natural to expect that in exploring a new country the easiest routes into the interior will be selected by the explorers wherever they are

BINGHAMTON.

known and available. As a usual thing such routes are water routes, and in this respect the exploration of this part of the New World was no exception.

Study once more the physical map of the state and notice again the two great natural highways which meet near Albany. The north and south one is the Champlain-Hudson depression, occupied at the north by Lake Champlain and Lake George, and at the south by the Hudson River. Samuel de Champlain, a Frenchman, made his way into the state from the St. Lawrence River and explored the beautiful lake which has received his name, and but a short time afterwards Henry Hudson, an English navigator temporarily employed by the Dutch, while searching for a "northwest" passage around the land of the New World, explored for a considerable distance the great river which now bears his name. Later Manhattan Island at the mouth of the river, the future home of the greatest city of the New World, was purchased from the Indians.

Long years of struggle followed, sometimes between European peoples who claimed the territory, — a contest which was finally settled in favor of the English, — and sometimes between the Europeans and the Indians.

After the Hudson valley was occupied, settlers pushed through the Mohawk valley and across the lake plains to the west, although their progress was opposed for a time in the central part of the state by a powerful group of Indian tribes called the "Five Nations."

In the beautiful valleys of the plateau section the early settlers pushed slowly into the interior, opposed of course by the Indians, but finally winning their way and permanently occupying the land. As the years have gone on, settlement has spread from the valley floors up the hillsides and into the less accessible portions of the state, until now practically every part of it is occupied by busy people.

TABLES FOR NEW YORK STATE

TEMPERATURE AND RAINFALL

Station	Average Annual Temperature	Average Annual Rainfall	Average Temperature in January	Average Temperature in July
New York	52°	44 in.	30°	74°
Setauket	51°	47 in.	30°	72°
Carmel	48°	52 in.	24°	71°
West Point	50°	46 in.	27°	74°
Mohonk Lake	46°	48 in.	23°	70°
Liberty	44°	45 in.	21°	67°
Oneonta	47°	41 in.	23°	70°
Albany	48°	37 in.	23°	72°
Glens Falls	46°	40 in.	19°	71°
Little Falls	45°	40 in.	19°	69°
North Lake	42°	49 in.	16°	65°
Saranac Lake	41°	35 in.	15°	65°
Plattsburg	44°	30 in.	18°	69°
Ogdensburg	44°	32 in.	16°	69°
Lowville	44°	36 in.	18°	67°
Oswego	47°	36 in.	24°	69°
Syracuse	47°	35 in.	23°	71°
Auburn	47°	36 in.	24°	70°
Cortland	45°	41 in.	23°	67°
Ithaca	47°	34 in.	24°	71°
Binghamton	47°	33 in.	23°	70°
Elmira	49°	34 in.	25°	72°
Angelica	45°	37 in.	22°	68°
Avon	47°	29 in.	23°	71°
Rochester	47°	34 in.	24°	70°
Lockport	47°	31 in.	24°	71°
Buffalo	47°	38 in.	25°	70°
Jamestown	47°	44 in.	27°	70°

DISTRIBUTION OF POPULATION

County	Area Sq. Mi.	Population	Pop. per Sq. Mi.	County	Area Sq. Mi.	Population	Pop. per Sq. Mi.
Albany	528	183,330	347	Niagara	522	108,550	208
Allegany	1,018	40,216	39	Oneida	1,180	167,331	142
Bronx	42	615,600	14,657	Onondaga	794	213,992	270
Broome	696	90,641	130	Ontario	652	54,628	84
Cattaraugus	1,330	72,756	55	Orange	849	118,118	139
Cayuga	722	65,751	91	Orleans	396	33,919	86
Chautauqua	1,062	116,818	110	Oswego	974	75,929	78
Chemung	394	59,017	153	Otsego	978	48,534	50
Chenango	847	36,648	43	Putnam	239	12,767	58
Clinton	1,041	47,561	46	Queens	129	396,727	3,073
Columbia	647	44,111	68	Rensselaer	664	121,330	183
Cortland	486	30,074	62	Richmond	58	98,634	1,701
Delaware	1,531	45,995	30	Rockland	180	46,903	261
Dutchess	800	91,044	114	St. Lawrence	2,810	90,291	32
Erie	1,040	571,897	550	Saratoga	830	62,982	76
Essex	1,834	32,461	18	Schenectady	210	98,625	470
Franklin	1,717	46,181	27	Schoharie	648	23,005	36
Fulton	486	45,625	94	Schuyler	339	13,954	41
Genesee	484	40,707	84	Seneca	328	25,249	77
Greene	644	30,091	47	Steuben	1,401	83,630	60
Hamilton	1,747	4,491	3	Suffolk	918	104,342	114
Herkimer	1,426	64,109	45	Sullivan	967	38,189	39
Jefferson	1,252	81,009	65	Tioga	518	25,549	49
Kings	78	1,798,513	23,058	Tompkins	477	36,535	82
Lewis	1,265	25,947	20	Ulster	1,128	85,367	76
Livingston	635	38,427	61	Warren	895	32,977	37
Madison	649	41,742	64	Washington	797	46,955	59
Monroe	643	319,310	497	Wayne	624	53,476	86
Montgomery	399	61,030	153	Westchester	450	321,713	715
Nassau	252	116,825	464	Wyoming	603	33,028	55
New York	21	2,137,747	101,797	Yates	348	18,841	54

MANUFACTURES OF NEW YORK STATE

(Census of 1910)

Manufacture	Per Cent of State's Total Manufactures
All industries ($3,369,490,000 a year)	100.0
Women's clothing	8.1
Men's clothing	7.9
Printing and publishing	6.4
Foundry and machine shop products	4.6
Slaughtering and meat packing	3.8
Bakery products (bread, etc.)	2.6
Malt liquors	2.3
Tobacco manufactures	2.3
Lumber and timber products	2.2
Flour and grist mill products	2.1
Hosiery and knit goods	2.0
Millinery and lace goods	1.5
Electrical machinery, apparatus, and supplies	1.5
Paper and wood pulp	1.4
Boots and shoes	1.4
Butter, cheese, and condensed milk	1.3
Gas, illuminating and heating	1.3
Men's furnishing goods	1.3
Furniture and refrigerators	1.2
Fur goods	1.2
Iron and steel (steel works and rolling mills)	1.2
Copper, tin, and sheet-iron products	1.1
Patent medicines, compounds and druggist's preparations	1.1
Chemicals	1.0
Musical instruments, pianos, and organs	1.0
Automobiles	0.9
Paint and varnish	0.8
Leather, tanned, curried, and finished	0.8
Iron and steel (blast furnaces)	0.8
Silk and silk goods	0.8
Carpets and rugs	0.8
Confectionery	0.8
Woolen, worsted, and felt goods, and felt hats	0.7
Soap	0.7
Brass and bronze products	0.7
Steam railroad cars, repairs, etc.	0.6
Artificial flowers and feathers and plumes	0.6
Leather goods	0.6
Jewelry	0.6
Cotton goods	0.6
Canning and preserving	0.6
Photographic apparatus and materials	0.6
Marble and stone work	0.5
Coffee and spice, roasting and grinding	0.5
Food preparations	0.5
Linseed oil	0.5
Agricultural implements	0.4
Leather gloves and mittens	0.4
Fancy and paper boxes	0.4
Carriages and wagons	0.4
Gas and electric lamps and fixtures	0.4
Cordage and twine, and jute and linen goods	0.4
Paper goods, not elsewhere specified	0.4
Ship and boat building	0.3
Malt	0.3
Typewriters and supplies	0.3
Hats, fur-felt	0.3
Wire	0.3
Dyeing and finishing textiles	0.3
Buttons	0.3
Smelting and refining, not from ores	0.3
Stoves and furnaces	0.3
Rubber goods, not elsewhere specified	0.3
Lapidary work	0.3
Brick and tile	0.2
Fancy articles, not elsewhere specified	0.2
Hair work	0.2
Silverware and plate ware	0.2
Hats and caps, other than felt, straw and wool	0.2
House-furnishing goods, not elsewhere specified	0.2
All other industries	16.9

LEADING MANUFACTURING CITIES

(Census of 1910)

(Cities producing over $5,000,000 worth of manufactures in 1909)

City	Value in millions of dollars
New York City	2,030
Buffalo	219
Rochester	113
Yonkers	59
Syracuse	49
Schenectady	38
Troy	38
Utica	31
Niagara Falls	29
Albany	23
Amsterdam	22
Binghamton	17
Auburn	16
Cohoes	15
Jamestown	15
Rome	14
Gloversville	14
Oswego	10
Olean	10
Newburgh	10
North Tonawanda	10
Poughkeepsie	9
Watertown	9
Little Falls	8
Lockport	8
Elmira	8
Peekskill	8
Fulton	8
Dunkirk	7
Johnstown	7
Cortland	6
Port Chester	6
Kingston	6
Geneva	5

MANUFACTURES OF BUFFALO

(Census of 1910)

Manufacture	Per Cent of City's Total Manufactures
All industries ($218,804,000 a year)	100.0
Slaughtering and meat packing	11.6
Foundry and machine shop products	9.5
Flour and grist mill products	9.0
Automobiles	4.4
Soap	4.0
Printing and publishing	3.5
Malt	3.2
Malt liquors	3.0
Lumber and timber products	2.6
Bakery products (bread, etc.)	2.5
All other industries	46.7

MANUFACTURES OF NEW YORK CITY

(Census of 1910)

Manufacture	Per Cent of City's Total Manufactures
All industries ($2,029,693,000 a year)	100.0
Women's clothing	13.1
Men's clothing	10.8
Printing and publishing	9.0
Slaughtering and meat packing	4.7
Foundry and machine shop products	3.1
Tobacco manufactures	3.0
Bakery products (bread, etc.)	3.0
Malt liquors	2.6
Millinery and lace goods	2.5
Fur goods	2.0
Gas, illuminating and heating	1.7
Paint and varnish	1.3
Musical instruments, pianos, organs	1.3
Men's furnishing goods	1.3
Patent medicines, and compounds, and druggist's preparations	1.2
Lumber and timber products	1.2
Copper, tin, and sheet-iron products	1.1
Artificial flowers and feathers and plumes	1.0
Confectionery	1.0
All other industries	35.1

(The refining of sugar and the smelting and refining of copper are among the leading manufactures, but their rank cannot be indicated.)

MANUFACTURES OF ROCHESTER

(Census of 1910)

Manufacture	Per Cent of City's Total Manufactures
All industries ($112,676,000 a year)	100.0
Men's clothing	16.7
Boots and shoes	11.9
Foundry and machine shop products	5.1
Printing and publishing	4.6
Flour and grist mill products	3.0
Furniture and refrigerators	2.7
Malt liquors	2.7
Bakery products (bread, etc.)	1.9
Electrical machinery and supplies	1.7
Buttons	1.6
All other industries	48.1

(The manufacture of photographic apparatus and materials is the second leading industry, but no figures can be given. There is also an extensive manufacture of optical goods.)

POPULATION OF CITIES AND LARGE VILLAGES (Census of 1915)

Albany	107,979	Ilion	8,900	Oneida	9,461
Albion	5,988	Ithaca	16,750	Oneonta	10,474
Amsterdam	34,319	Jamestown	37,780	Ossining	10,326
Auburn	32,468	Johnson City	5,400	Oswego	25,426
Batavia	13,278	Johnstown	10,687	Peekskill	15,502
Beacon	10,165	Kingston	26,354	Plattsburg	10,134
Binghamton	53,668	Lackawanna	15,737	Port Chester	15,129
Buffalo	454,630	Lancaster	5,094	Port Jervis	9,413
Canandaigua	7,501	Little Falls	13,022	Poughkeepsie	32,714
Catskill	5,371	Lockport	18,693	Rensselaer	11,210
Cohoes	23,433	Malone	7,404	Rochester	248,465
Corning	13,459	Mamaroneck	7,290	Rockville Center	5,223
Cortland	12,367	Mechanicville	8,208	Rome	21,926
Dunkirk	17,870	Medina	6,079	Rye	5,339
Elmira	40,093	Middletown	16,381	Salamanca	8,370
Endicott	5,581	Mount Vernon	37,583	Saratoga Springs	13,792
Fredonia	5,328	Newark	6,468	Schenectady	80,381
Freeport	7,463	Newburgh	27,876	Seneca Falls	7,018
Fulton	11,138	New Rochelle	31,758	Solvay	5,886
Geneva	13,232	New York	5,047,221	Syracuse	145,293
Glens Falls	16,323	Manhattan Bor.	2,137,747	Tarrytown	5,752
Gloversville	21,178	Bronx	615,600	Tonawanda	9,147
Hastings-on-Hudson	5,461	Brooklyn Bor.	1,798,513	Troy	75,488
Haverstraw	5,418	Richmond Bor.	98,634	Utica	80,589
Hempstead	6,073	Queens Bor.	396,727	Walden	5,196
Herkimer	9,577	Niagara Falls	42,257	Watertown	26,895
Hoosick Falls	5,406	North Tonawanda	13,498	Watervliet	14,990
Hornell	14,352	Norwich	8,342	Waverly	5,119
Hudson	11,544	Ogdensburg	14,338	White Plains	19,287
Hudson Falls	5,585	Olean	17,925	Yonkers	90,948

SIZE AND POPULATION

SUMMARY.

Length of the earth's axis (miles)		7,900
Length of the equator	"	24,900
Earth's Surface (sq. miles)		**196,900,000**
Pacific Ocean	" "	71,000,000
Atlantic Ocean	" "	34,000,000
Indian Ocean	" "	28,000,000
Antarctic Ocean	" "	2,700,000
Arctic Ocean	" "	4,000,000
The Sea	" "	**139,700,000**

	Area in Sq. Miles.	Population.
Asia	17,056,000	859,571,000
Africa	11,514,000	133,929,000
North America	9,432,000	129,606,000
South America	6,856,000	55,556,000
Europe	3,841,000	460,882,000
Australia, etc.	3,457,000	7,566,000
Antarctic Cont.	5,000,000	.....
The Land	**57,156,000**	**1,647,110,000**

ASIA.

Russia in Asia	6,656,000	29,694,000
China, etc.	4,301,000	320,650,000
Japanese Empire	261,000	73,576,000
British India, etc.	1,856,500	315,157,000
Ceylon, etc.	25,500	3,643,000
Straits Set., etc.	35,500	2,676,000
Other Brit. Pos.	20,000	1,130,000
Nepal, Bhutan	73,000	5,250,000
Port. India, etc.	1,500	606,000
Siam	245,000	8,150,000
Fr. Indo-China, etc.	256,000	16,596,000
Afghanistan	241,000	6,000,000
Persia	635,000	9,500,000
Turkey in Asia	706,000	19,408,000
Arabia	955,000	1,450,000
East Indies	788,000	46,085,000
Total	17,056,000	859,571,000

AFRICA.

Morocco (Including parts of the Sahara)	176,000	3,464,000
Algeria (Including parts of the Sahara)	344,000	5,564,000
Tunis (Including parts of the Sahara)	65,000	1,781,000
Libia (Including parts of the Sahara)	406,000	529,000
Egypt (Including parts of the Sahara)	248,000	11,287,000
Sahara, remaining part	2,461,000	791,000
Abyssinia	312,000	8,000,000
Eritrea	42,000	450,000
Somaliland, etc.	215,000	918,000
British E. Africa	433,000	7,047,000
Sudan, etc.	2,974,000	50,209,000
Belgian Kongo	927,000	15,000,000
Angola, etc.	491,000	4,161,000
Mozambique	296,000	3,120,000
Ger. E. Africa	372,000	7,665,000
Ger. S. W. Africa	318,000	95,000
Rhodesia	409,000	1,617,000
Transvaal	114,000	1,686,000
Orange Free State	48,000	528,000
Natal	35,000	1,194,000
C. of Good Hope	277,000	2,565,000
Other Br. S. Afr.	314,000	1,601,000
African Islands	237,000	4,657,000
Total	11,514,000	133,929,000

NORTH AMERICA.

	Area in Sq. Miles.	Population.
United States	3,089,000	91,972,000
Alaska	591,000	64,000
Dom. of Canada	3,759,000	7,205,000
Newfoundland, etc.	50,000	243,000
Greenland	838,000	14,000
Iceland	40,000	85,000
Mexico	767,000	15,160,000
Central America	207,000	5,375,000
West Indies, etc.	91,000	9,488,000
Total	9,432,000	129,606,000

SOUTH AMERICA.

Colombia	466,000	5,071,000
Venezuela	364,000	2,756,000
Guiana, British	95,000	296,000
Guiana, Dutch	50,000	86,000
Guiana, French	30,000	49,000
Brazil	3,301,000	24,308,000
Ecuador (incl. Galapagos Islands)	119,000	1,500,000
Peru	439,000	4,586,000
Bolivia	442,000	2,521,000
Chile	293,000	3,552,000
Argentina	1,083,000	8,700,000
Paraguay	98,000	850,000
Uruguay	69,000	1,279,000
Islands	7,000	2,000
Total	6,856,000	55,556,000

EUROPE.

British Possessions	121,000	45,620,000
German Empire	210,000	64,926,000
Luxemburg	1,000	260,000
Belgium	11,000	7,424,000
Netherlands	13,000	6,213,000
Denmark	16,000	2,775,000
Norway	125,000	2,392,000
Sweden	173,000	5,522,000
France	207,000	39,625,000
Spain	192,000	19,089,000
Portugal	36,000	5,959,000
Switzerland	16,000	3,831,000
Italy	111,000	34,682,000
Austria-Hungary	261,000	51,366,000
Roumania	53,000	7,508,000
Bulgaria	43,000	4,752,000
Serbia	34,000	4,548,000
Montenegro	6,000	516,000
Albania	11,000	850,000
Greece	43,000	4,821,000
Turkey in Europe	11,000	1,891,000
Russia in Europe	2,113,000	146,312,000
Arctic Islands	34,000	.....
Total	3,841,000	460,882,000

AUSTRALIA, Etc.

Com. of Australia	2,973,000	4,455,000
New Zealand	105,000	1,085,000
New Guinea Gr.	311,000	983,000
Hawaiian Islands	6,000	192,000
Other Islands	62,000	851,000
Antarctic Cont.	5,000,000	
Total	8,457,000	7,566,000

UNITED STATES.

Population according to the Federal Census of 1910.

	Sq. Miles.	Population.
Alabama	51,998	2,138,093
Arizona	113,956	204,354
Arkansas	53,335	1,574,449
California	158,297	2,377,549
Colorado	103,948	799,024
Connecticut	4,965	1,114,756
Delaware	2,370	202,322
District of Columbia	70	331,069
Florida	58,666	752,619
Georgia	59,265	2,609,121
Idaho	84,313	325,594
Illinois	56,665	5,638,591
Indiana	36,354	2,700,876
Iowa	56,147	2,224,771
Kansas	82,158	1,690,949
Kentucky	40,598	2,289,905
Louisiana	48,506	1,656,388
Maine	33,040	742,371
Maryland	12,327	1,295,346
Massachusetts	8,266	3,366,416
Michigan	57,980	2,810,173
Minnesota	84,682	2,075,708
Mississippi	46,865	1,797,114
Missouri	69,420	3,293,335
Montana	146,572	376,053
Nebraska	77,520	1,192,214
Nevada	110,690	81,875
New Hampshire	9,341	430,572
New Jersey	8,224	2,537,167
New Mexico	122,634	327,301
New York	49,204	9,113,614
North Carolina	52,426	2,206,287
North Dakota	70,837	577,056
Ohio	41,040	4,767,121
Oklahoma	70,057	1,657,155
Oregon	96,699	672,765
Pennsylvania	45,126	7,665,111
Rhode Island	1,248	542,610
South Carolina	30,989	1,515,400
South Dakota	77,615	583,888
Tennessee	42,022	2,184,789
Texas	265,896	3,896,542
Utah	84,990	373,351
Vermont	9,564	355,956
Virginia	42,627	2,061,612
Washington	69,127	1,141,990
West Virginia	24,170	1,221,119
Wisconsin	56,066	2,333,860
Wyoming	97,914	145,965
Part Great Lakes	61,730	
Total Main Body	*3,088,519*	*91,972,266*

Outlying Territory, Etc.

Ter. of Alaska	590,884	64,356
Ter. of Hawaii	6,449	191,909
Porto Rico	3,435	1,118,012
St. Thomas, etc.	138	27,086
Philippine Is. ('03)	115,026	7,635,426
Tutuila, etc.	77	6,100
Guam	210	9,000
Canal Zone	474	50,000
Persons in the military and naval service of the U. S. stationed abroad		55,608
Total Outlying	*716,693*	*9,157,497*
Grand Total	*3,805,212*	*101,129,763*

POPULATION OF IMPORTANT CITIES IN THE UNITED STATES, 1915.

Albany, N.Y.	107,979	Duluth, Minn.	91,913	Memphis, Tenn.	146,113	St. Paul, Minn.	241,999
Albuquerque, N. Mex.	13,541	East St. Louis, Ill.	72,105	Meridian, Miss.	21,812	Salt Lake City, Utah	113,567
Atlanta, Ga.	184,873	Elizabeth, N.J.	82,036	Milwaukee, Wis.	428,062	San Antonio, Tex.	119,447
Augusta, Ga.	49,848	El Paso, Tex.	51,936	Minneapolis, Minn.	353,460	San Francisco, Cal.	456,009
Baltimore, Md.	584,605	Erie, Pa.	73,798	Mobile, Ala.	56,536	Savannah, Ga.	68,361
Birmingham, Ala.	174,108	Evansville, Ind.	72,125	Montgomery, Ala.	42,531	Scranton, Pa.	144,081
Boise, Ida.	31,741	Fall River, Mass.	124,791	Nashville, Tenn.	115,978	Seattle, Wash.	330,834
Boston, Mass.	745,439	Fargo, N.D.	20,549	Newark, N.J.	366,721	Sioux City, Iowa	61,774
Bridgeport, Conn.	118,434	Fort Wayne, Ind.	74,352	New Bedford, Mass.	109,568	Sioux Falls, S.D.	20,929
Brockton, Mass.	62,288	Fort Worth, Tex.	99,528	New Haven, Conn.	147,095	Somerville, Mass.	86,854
Buffalo, N.Y.	454,630	Galveston, Tex.	41,076	New Orleans, La.	366,484	Spokane, Wash.	142,990
Burlington, Vt.	21,432	Grand Rapids, Mich.	125,759	New York, N.Y.	5,047,221	Springfield, Ill.	59,468
Butte, Mont.	42,918	Harrisburg, Pa.	70,754	Norfolk, Va.	88,076	Springfield, Mass.	102,971
Cambridge, Mass.	108,822	Hartford, Conn.	108,969	Oakland, Cal.	190,803	Superior, Wis.	45,285
Camden, N.J.	102,215	Hoboken, N.J.	67,611	Oklahoma City, Okla.	88,158	Syracuse, N.Y.	145,293
Charleston, S.C.	60,427	Houston, Tex.	108,172	Omaha, Neb.	163,200	Tacoma, Wash.	108,094
Charlotte, N.C.	38,887	Indianapolis, Ind.	265,578	Paterson, N.J.	124,815	Tampa, Fla.	55,978
Chattanooga, Tenn.	58,576	Jackson, Miss.	28,372	Peoria, Ill.	70,732	Toledo, Ohio	187,840
Cheyenne, Wyo.	9,661	Jacksonville, Fla.	66,850	Philadelphia, Pa.	1,683,664	Topeka, Kan.	46,747
Chicago, Ill.	2,447,045	Jersey City, N.J.	270,903	Pittsburgh, Pa.	571,984	Trenton, N.J.	103,190
Cincinnati, Ohio	406,706	Kansas City, Kan.	91,658	Portland, Me.	63,014	Troy, N.Y.	75,488
Cleveland, Ohio	656,975	Kansas City, Mo.	289,879	Portland, Ore.	272,833	Tucson, Ariz.	16,177
Colorado Springs, Col.	32,344	Knoxville, Tenn.	38,300	Providence, R.I.	247,660	Utica, N.Y.	80,589
Columbus, Ohio	209,722	Lawrence, Mass.	90,259	Pueblo, Col.	52,840	Washington, D.C.	358,679
Covington, Ky.	56,520	Lincoln, Neb.	46,028	Reading, Pa.	107,594	Waterbury, Conn.	84,745
Dallas, Tex.	118,482	Little Rock, Ark.	55,158	Reno, Nev.	14,224	Wheeling, W.Va.	43,097
Davenport, Iowa	48,483	Los Angeles, Cal.	475,367	Richmond, Va.	154,674	Wichita, Kan.	53,582
Dayton, Ohio	125,509	Louisville, Ky.	237,012	Rochester, N.Y.	250,767	Wilkes-Barre, Pa.	75,218
Denver, Col.	253,161	Lowell, Mass.	107,978	Sacramento, Cal.	64,806	Wilmington, Del.	93,161
Des Moines, Iowa	105,652	Lynn, Mass.	95,803	Saginaw, Mich.	54,815	Wilmington, N.C.	29,384
Detroit, Mich.	554,717	Macon, Ga.	45,415	St. Joseph, Mo.	83,974	Worcester, Mass.	162,697
Dubuque, Iowa	41,795	Manchester, N.H.	76,959	St. Louis, Mo.	745,988	Yonkers, N.Y.	90,948

POPULATION OF IMPORTANT FOREIGN CITIES.

	Latest Census.				
Alexandria, Egypt	332,000 ('07)	Constantinople, Turkey	1,125,000	Montreal, Canada	471,000 ('11)
Amsterdam, Netherlands	595,000 ('13)	Copenhagen, Denmark	462,000 ('11)	Moscow, Russia	1,618,000 ('10)
Antwerp, Belgium	313,000 ('12)	Delhi, India	233,000 ('11)	Naples, Italy	723,000 ('11)
Athens, Greece	168,000 ('07)	Dublin, Ireland	309,000 ('11)	Odessa, Russia	540,000 ('10)
Bangkok, Siam	629,000 ('10)	Edinburgh, Scotland	320,000 ('11)	Paris, France	2,888,000 ('11)
Barcelona, Spain	587,000 ('10)	Glasgow, Scotland	783,000 ('11)	Peking, China	692,000
Belfast, Ireland	386,000 ('11)	Hague, Netherlands	302,000 ('13)	Petrograd, Russia	1,908,000 ('10)
Berlin, Germany	2,071,000 ('10)	Hamburg, Germany	932,000 ('10)	Quebec, Canada	78,000 ('11)
Birmingham, England	526,000 ('11)	Havana, Cuba	351,000 ('14)	Rio de Janeiro, Brazil	1,128,000 ('11)
Bombay, India	980,000 ('11)	Hongkong, Asia	457,000 ('11)	Rome, Italy	539,000 ('11)
Bordeaux, France	262,000 ('11)	Johannesburg, Transvaal	237,000 ('11)	Santiago, Chile	378,000 ('12)
Brussels, Belgium	664,000 ('12)	Lisbon, Portugal	435,000 ('11)	Shanghai, China	651,000 ('04)
Bucharest, Roumania	338,000 ('12)	Liverpool, England	747,000 ('11)	Stockholm, Sweden	342,000 ('10)
Budapest, Austria-Hungary	882,000 ('10)	London, England	7,253,000 ('11)	Sydney, New South Wales	637,000 ('11)
Buenos Aires, Argentina	1,560,000 ('14)	Lyons, France	524,000 ('11)	Tashkend, Rus. Turkestan	272,000 ('10)
Cairo, Egypt	655,000 ('07)	Madras, India	519,000 ('11)	Teheran, Persia	280,000
Calcutta, India	1,222,000 ('11)	Madrid, Spain	600,000 ('10)	Tokyo, Japan	2,099,000 ('12)
Canton, China	900,000 ('04)	Manchester, England	715,000 ('11)	Venice, Italy	161,000 ('11)
Cape Town, C. of Good Hope	67,000 ('11)	Marseilles, France	551,000 ('11)	Vienna, Austria-Hungary	2,031,000 ('10)
Christiania, Norway	244,000 ('10)	Melbourne, Victoria	592,000 ('11)	Warsaw, Russia	848,000 ('10)
Cologne, Germany	516,000 ('10)	Mexico, Mexico	471,000 ('10)	Yokohama, Japan	394,000 ('09)
		Milan, Italy	599,000 ('11)	Zurich, Switzerland	191,000 ('10)

MOUNTAINS AND PLATEAUS.

	Av. Elev. Feet.
Mount Everest	29,000
Himalaya Mountains	19,000
Andes Mountains	13,000
Caucasus Mountains	10,000
Rocky Mountains	10,000
Atlas Mountains	9,000
Alps Mountains	8,500
East Australian Mountains	5,000
Appalachian Mountains	2,500
Plateau of Tibet	15,000
Plateau of Bolivia	12,500
Rocky Mountain highland —	
in the United States	5,000
in Mexico	7,500
Abyssinian highland	6,500
Plateau of Iran	5,000
Desert of Gobi	3,500
Plateau of Guiana	2,000
Brazilian plateau	2,000

RIVERS AND THEIR BASINS.

	Area of Basin, Sq. Mi.	Mi. Long.		Area of Basin, Sq. Mi.	Mi. Long.
Amazon, S. America	2,320,000	3,400	Mississippi proper	1,250,000	2,600
Amur, Asia	780,000	2,700	Missouri	527,000	2,900
Arkansas, U.S.	189,000	2,000	Nelson-Saskatchewan, Can.	470,000	1,900
Colorado, U.S.	230,000	1,000	Niger, Africa	1,000,000	2,900
Columbia, N. America	290,000	1,400	Nile, Africa	1,300,000	3,900
Danube, Europe	320,000	1,800	Ob, Asia	1,100,000	3,000
Dnieper, Russia	197,000	1,300	Ohio, U.S.	202,000	1,260
Don, Russia	170,000	1,100	Orange, Africa	270,000	1,200
Euphrates, Asia	490,000	2,000	Orinoco, S. America	425,000	1,500
Ganges, India	600,000	1,800	Plata, S. America	1,150,000	2,500
Hoang, China	390,000	2,800	Rhine, Europe	87,000	810
Hudson, U.S.	13,000	300	Rio Grande, N. America	230,000	1,800
Indus, Asia	360,000	1,900	St. Lawrence, N. America	565,000	2,100
Kongo, Africa	1,500,000	2,800	São Francisco, Brazil	210,000	1,800
Lena, Siberia	900,000	2,800	Volga, Russia	590,000	2,300
Loire, France	47,000	600	Yangtze, China	690,000	3,100
Mackenzie, Canada	680,000	2,100	Yenisei, Asia	1,500,000	3,000
Mekong, Asia	280,000	2,600	Yukon, N. America	380,000	2,000
Mississippi-Missouri, U.S.	1,250,000	4,200	Zambezi, Africa	580,000	1,600

INDEX AND PRONOUNCING VOCABULARY

KEY. — VOWELS: **ā** in **lāte**, **ă** in **făt**, **â** in **câre**, **ä** in **färm**, **à** in **làst**, **ą** in **fąll**, **a** in **was**, **a** in **final**, **au** in **author**; **ē** in **mē**, **ĕ** in **mĕt**, **bĕrry**, **ę** in **veil**, **ē** in **tērm**, **ę** in **novęl**; **ī** in **fīne**, **ĭ** in **tĭn**, **ī** in **police**; **ō** in **nōte**, **ŏ** in **nŏt**, **ò** in **sòn**, **ô** in **fôr**, **o** in **do**, **ọ** in **wọlf**; **ū** in **tūne**, **ŭ** in **nŭt**, **u** in **rude** (= o), **u** in **full**, **ua** = **wa**, **ue** = **we**; **ȳ** in **mȳ**, **y** in **hymn**. CONSONANTS: **ç** in **çent**, **maçhine**, **e** in **ean**; **ġ** in **ġem**, **g** in **get**; **K** = German **ch**; **n** = **ng**; **s** = **z**; **x** = **gz**. *Italic letters are silent.*

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